

Switch Mode Power Supply

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Switch Mode Power Supply

VISHAY Components used for Switch Mode Power Supplies include:

- Power MOSFETS
- Controller ICs
- Optocouplers
- Schottky Diodes/Rectifiers
- Ultrafast Rectifiers
- TVS
- Bridge Rectifiers
- Zener Diodes
- Switching Diodes
- X/Y Capacitors
- Aluminum Electrolytic Capacitors
- High-Voltage Resistors
- NTC and PTC Thermistors
- Inductors/EMI Filters
- Secondary Protection Fuses

Application Overview

Switch Mode Power Supply (SMPS) applications generally involve power adaptors, desktop power, or server power. SMPS design is separated into primary and secondary sections due to isolation topology. The primary section involves EMI filtering, input rectification, and power factor correction (PFC) devices. The most important design concept is PFC to improve efficiency. Good performance of a PFC rectifier enables the power supply to operate efficiently under a light current load. Ultra-fast recovery time of the rectifier and low Q_g of the switching MOSFET are the most important factors associated with PFC. No matter what kind of topology is involved, PFC is the key not only to increasing efficiency, but also to improving thermal performance, especially for 80-plus SMPS. For EMI, film capacitors and ceramic disc capacitors are good for X-capacitor and Y-capacitor design, respectively. Regarding input rectifier devices, single-phase bridge rectifiers are the best solution, especially for power adaptors. The secondary section includes output rectifiers and filters. Trench MOS Schottky technology is a new technology that can replace planar technology as a non-synchronous rectifier solution. Its key feature is ultra-low forward voltage, or V_f . Trench MOS Schottky rectifiers work well as output rectifiers, especially in multi-output systems. In addition to providing good forward voltage performance at high ambient temperature, they also feature high current handling and voltage (up to 150 V) capabilities. Different solutions are based on different specifications.

Switch Mode Power Supply : ADAPTOR, Buck Capacitance

Snap-In Aluminum cap

Product Name	Status	Description	Features	Package	Q-Level
152RMH		Aluminum Capacitors; Radial; Miniature; High Voltage	1.0-220 μ F; Vr=200-450V; Temp. Range= -40 -+105°C; Life@105°C=3000h-4000h	TH / Radial 10x12 to 18x35mm	

Switch Mode Power Supply : ADAPTOR, EMI Filtering

X-cap

Product Name	Status	Description	Features	Package	Q-Level
339 series		Interference Suppression Film Capacitors MKP Radial Potted Type	X2-Class; 0.001 to 4.7 μ F AC 275 V; DC 630V; Temp=110°C;	TH / Radial 7.5-27.5mm Pitch Radial	UL EN CAS

Y-cap

Product Name	Status	Description	Features	Package	Q-Level
VY1		Ceramic Disc Capacitors; Y-Capacitor; Safety Standard Approved Disc Capacitor;	C=10 pF to 4700 pF; (Y1):500 V (AC), 50 Hz; Temp=- 40 °C to + 125 °C;	TH / Radial 10mm Lead Pitch	
VY2		Ceramic Disc Capacitors; Y-Capacitor; Safety Standard Approved Disc Capacitor;	C=10 pF to 0.01 μ F; (Y2):300 V (AC), 50 Hz; Temp=- 40 °C to + 125 °C;	TH / Radial 5-10mm Pitch	

Switch Mode Power Supply : ADAPTOR, Feedback Loop

Multilayer Ceramic Chip Capacitors

Product Name	Status	Description	Features	Package	Q-Level
K10		Multilayer Ceramic K10 Capacitors Dipped; Radial;	COG(NPO)10-1000pF;50/100V X7R=100pF-0.1μF;50/100V Y5V=1pF-0.1μF;50V	TH / Radial L2,H5,K2,K5	

OptoCoupler

Product Name	Status	Description	Features	Package	Q-Level
SFH617A		Optocoupler; Phototransistor Output; High Reliability;	VISO=5300VRMS; Tamb: -55 to +110°C; CTR:40 to 320%	TH / DIP DIP4	
SFH690CT		Optocoupler; Phototransistor Output;	VISO=3750VRMS; Tamb: -55 to +100°C; CTR:50 to 400%	SMD SOP-4	CSA 93751 UL1577 BSI
TCET1104		Optocoupler; Phototransistor Output; High Temperature Capable;	VISO=5000VRMS; Tamb: -40 to +100°C; CTR:50 to 600%	TH / DIP DIP4	
TCET1114		Optocoupler; Phototransistor Output; High Temperature Capable;	VISO=5000VRMS; Tamb: -40 to +100°C; CTR:50 to 600%	TH / DIP DIP4	

Switch Diode

Product Name	Status	Description	Features	Package	Q-Level
1N4007		General Purpose Plastic Rectifier	IF(AV):1.0 A; VRRM:= 50V-1000V; IFSM=30A; VF=1.1 V;	TH / Axial DO-204AL (DO-41)	
1N4148		Small Signal Fast Switching Diodes	VRRM:= 100V;VR: = 75V; IFSM=2A; IF=300mA; IFAV=150mA;Ptot=500mW;	TH / Axial DO-35 Glass Case	

Zener Diode

Product Name	Status	Description	Features	Package	Q-Level
BZX384		Small Signal Zener Diodes	Vz = 2.4V to 75V; Ptot = 200mW; Tj max= 150°C;	SMD SOD323 Plastic Case	
TLZ		Small Signal Zener Diodes	Vz: = 2.4V to 56V Ptot = 500mW; Tj max = 175°C	SMD SOD80 MiniMELF	
TZX		Small Signal Zener Diodes	Vz: = 2.4V to 36V Ptot = 500mW; Tj max = 175°C	TH / Axial DO-35 Glass Case	

Switch Mode Power Supply : ADAPTOR, Input Rectification

Bridge Rectifier

Product Name	Status	Description	Features	Package	Q-Level
2KBP06M		Single-Phase Bridge Rectifier; Glass Passivated; Tjmax=165°C;	IF(AV): = 2A; VRRM:= 50V-1000V; IFSM=60A;Vf=1.1V;	TH / SIP KBPM	
3KBP06M		Single-Phase Bridge Rectifier; Glass Passivated;	IF(av)=3A; Vf=1.05V; Vrrm=50V-800V;Ifsm=80A;	TH /SIP KBPM	
DF06MA		Single-Phase Bridge Rectifiers; Miniature; Glass Passivated;	IF(av)=1A; Vf=1.1V; Vrrm=50V-1000V;Ifsm=30A Tj max= 150°C;	TH / DIP DFM	
GBL06		Single-Phase Bridge Rectifiers; Glass Passivated;	IF(av)=4A; Vf=1V; Vrrm=50V-1000V;Ifsm=150A Tjmax=150°C;	TH / SIP GBL	
GBLA06		Single-Phase Bridge Rectifiers; Glass Passivated;	IF(av)=4A; Vf=1V; Vrrm=50V-1000V;Ifsm=120A Tjmax=150°C;	TH / SIP GBL	
GBU6J		Single-Phase Bridge Rectifiers; Glass Passivated;	IF(av)=6A; Vf=1V; Vrrm=50V-1000V;Ifsm=175A Tjmax=150°C;	TH / SIP GBU	
GBU8J		Single-Phase Bridge Rectifiers; Glass Passivated;	IF(av)=8A; Vf=1V; Vrrm=50V-1000V;Ifsm=200A Tjmax=150°C;	TH / SIP GBU	

Switch Mode Power Supply : ADAPTOR, Output Filter

Aluminum cap

Product Name	Status	Description	Features	Package	Q-Level
037RSM		Aluminum Capacitors; Radial; Standard Miniature;	0.47-10 000 μ F; 6.3-100V; Temp. Range= -40-85°C; Life at 85°C=2500h	TH / Radial 5x11 to 16x31mm	
136RVI		Aluminum Capacitors; Radial; Very Low Impedance;	22-10 000 μ F; Vr=10-100V; Temp. Range= -55 -+105°C; Life@105°C=4000h-10,000h	TH / Radial 10x12 to 18x35mm	

Multilayer Ceramic Chip Capacitors

Product Name	Status	Description	Features	Package	Q-Level
K10		Multilayer Ceramic K10 Capacitors Dipped; Radial;	COG(NPO)10-1000pF;50/100V X7R=100pF-0.1 μ F;50/100V Y5V=1pF-0.1 μ F;50V	TH / Radial L2,H5,K2,K5	

Switch Mode Power Supply : ADAPTOR, Output Rectification

Low Voltage MOSFETs

Product Name	Status	Description	Features	Package	Q-Level
SUP40N10-30		N-Channel 100-V (D-S) 175 °C MOSFET	Vdss=100V; ID=40A; rDS(on)=0.030Ω Qg=35nC;	TH / Radial TO-220AB	
SUP90N10-8m8P	NEW	N-Channel 100-V (D-S) 175 °C MOSFET	Vdss=100V; ID=90A; rDS(on)=0.008Ω	TH / Radial TO-220AB	

Schottky

Product Name	Status	Description	Features	Package	Q-Level
V20100C		Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 10A; VF=0.58V; Vrrm=100V; Tj max.=150 °C;	TH / Radial TO-220AB; TO-262AA	
V20100C		Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 10A; VF=0.58V; Vrrm=100V; Tj max.=150 °C;	SMD TO-263AB D2PAK	
V20100SG		Trench MOS Barrier Schottky Rectifier; High-Voltage	IF(AV)=20 A; VF=0.75V; Vrrm=100V; Tj max.=150 °C;	TH / Radial TO-220AB; TO-262AA	
V20120C	NEW	Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 10A; VF=0.61V; Vrrm=120V; Tj max.=150 °C;	TH / Radial TO-220AB	
V20120SG		Trench MOS Barrier Schottky Rectifier; High-Voltage	IF(AV)=20 A; VF=0.77V; Vrrm=120V; Tj max.=150 °C;	TH / Radial TO-220AB; ITO-220AB	
V30100C		Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 15A; VF=0.627V; Vrrm=100V; Tj max.=150 °C;	TH / Radial TO-220AB	
V30100SG		Trench MOS Barrier Schottky Rectifier; High-Voltage	IF(AV)=30 A; VF=0.757V; Vrrm=100V; Tj max.=150 °C;	TH / Radial (I)TO-220AB TO-262AA	
V30100SG		Trench MOS Barrier Schottky Rectifier; High-Voltage	IF(AV)=30 A; VF=0.757V; Vrrm=100V; Tj max.=150 °C;	SMD TO-263AB D2PAK	
V30120C	NEW	Trench MOS Barrier Schottky Rectifier; High-Voltage	IF(AV)=30 A; VF=0.7V; Vrrm=120V; Tj max.=150 °C;	TH / Radial TO-220AB; TO-262AA	
V30120SG	NEW	Trench MOS Barrier Schottky Rectifier; High-Voltage	IF(AV)=30 A; VF=0.712V; Vrrm=120V; Tj max.=150 °C;	TH / Radial (I)TO-220AB TO-262AA	
V30120SG	NEW	Trench MOS Barrier Schottky Rectifier; High-Voltage	IF(AV)=30 A; VF=0.712V; Vrrm=120V; Tj max.=150 °C;	SMD TO-263AB D2PAK	
V40100C	NEW	Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 205A; VF=0.61V; VRRM=100 V; Tj max.=150 °C;	TH / Radial TO-220AB	
V40100G		Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 20A; VF=0.67V; VRRM=100 V; Tj max.=150 °C;	TH / Radial TO-220AB; TO-262AA	
V40100G		Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 20A; VF=0.67V; VRRM=100 V; Tj max.=150 °C;	SMD TO-263AB D2PAK	
V40120C	NEW	Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 20A; VF=0.630V; VRRM=120 V; Tj max.=150 °C;	TH / Radial TO-220AB; TO-262AA	
V40120C	NEW	Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 20A; VF=0.630V; VRRM=120 V; Tj max.=150 °C;	SMD TO-263AB D2PAK	

Switch Mode Power Supply : ADAPTOR, PFC

600V Ultra Fast Diode

Product Name	Status	Description	Features	Package	Q-Level
MUR460		Ultrafast Plastic Rectifier	IF(av)=4A; Vf=1.05V; Vrrm=400V to 600V; Trr=50ns; Tj max.=175 °C;	TH / Axial DO-201AD	

General Rectifier

Product Name	Status	Description	Features	Package	Q-Level
1N5406		General-purpose Plastic Rectifier; Tj max = 150 °C;	IF(AV): = 3A; VRRM:= 50V-1000V; IFSM=200A;Vf=1.2V;	TH / Axial DO-201AD	

High Voltage MOSFETs

Product Name	Status	Description	Features	Package	Q-Level
IRFB17N60KPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem.	Vdss=600V; ID=17A; rDS(on)=0.35Ω; Qg=99nC;	TH / Radial TO-220AB	

High Voltage Resistor

Product Name	Status	Description	Features	Package	Q-Level
VR25		High Ohmic/High Voltage Resistors	High pulse loading cap.; Small size	TH / Axial 0207 A5;A2;A1;R5;N4	

Switch Mode Power Supply : ADAPTOR, PWM

High Voltage MOSFETs

Product Name	Status	Description	Features	Package	Q-Level
IRFBE30PBF		SMPS MOSFET; HEXFET® Power MOSFET; Fast Switching; Low $r_{DS(on)}$; Cost effe.; Low thermal resistance;	$V_{dss}=900V$; $I_D=3.6A$; $r_{DS(on)}=3.7\Omega$; $Q_g=78nC$;	TH / Radial TO-220AB	
IRFBF30PBF		SMPS MOSFET; HEXFET® Power MOSFET; Fast Switching; Low $r_{DS(on)}$; Cost effe.; Low thermal resistance;	$V_{dss}=800V$; $I_D=4.1A$; $r_{DS(on)}=35\Omega$; $Q_g=78nC$;	TH / Radial TO-220AB	

Switch Mode Power Supply : ADAPTOR, Snubber

Switch Diode

Product Name	Status	Description	Features	Package	Q-Level
1N4007		General Purpose Plastic Rectifier	IF(AV):1.0 A; VRRM:= 50V-1000V; IFSM=30A; VF=1.1 V;	TH / Axial DO-204AL (DO-41)	
1N5408		General-purpose Plastic Rectifier; Tj max = 150 °C;	IF(AV): = 3A; VRRM:= 50V-1000V; IFSM=200A; Vf=1.2V;	TH / Axial DO-201AD	
BYV26EGP		Glass Passivated Ultrafast Rectifier	IF(AV):1.0 A; VF:1.3 V; Vrrm=800V/1000V; Ifsm=30A Trr = 75nS; Tjmax=175°C;	TH / Axial DO-204AC (DO-15)	
RS1PD		Fast Switching Rectifier High Current Density; SMD; Glass Passivated;	IF(AV):1.0 A; VF:1.3 V; VRRM:100V-600V; IFSM:30A; Trr:=150-250ns;	SMD DO-220AA (SMP)	

TVS

Product Name	Status	Description	Features	Package	Q-Level
1.5KE		TRANSZORB® Transient Voltage Suppressors Tj max = 175°C	V(BR) Unidirec.:6.8-540V V(BR) Bidirec.:6.8-440V; PPPM:1500W; PD:6.5W	TH / Axial 1.5KE	
P4KE		TRANSZORB® Transient Voltage Suppressors Tj max:175 °C;	V(BR)Unidirec.:6.8V-540V; V(BR) Bidirec.:6.8V-440V PPPM:=400W; PD:= 1W;	TH / Axial DO-204AL (DO-41)	
P6KE		TRANSZORB® Transient Voltage Suppressors Tj max:175 °C;	V(BR)Unidirec.:6.8V-540V; V(BR) Bidirec.:6.8V-440V PPPM:=600W; PD:= 5W;	TH / Axial DO-204AC (DO-15)	

Switch Mode Power Supply : DESKTOP POWER, Buck Capacitance

Snapin Aluminum cap

Product Name	Status	Description	Features	Package	Q-Level
094 series	NEW	Aluminum Capacitors; Snap-in; Power Miniaturized; Long-Life;	47-680 μ F; Vr=400V/450V; Temp. Range= -25 -+105°C; Life at 105°C=2000h	TH / Snap-In 22x25 to 35x50mm	

Switch Mode Power Supply : DESKTOP POWER, EMI Filtering

X-cap

Product Name	Status	Description	Features	Package	Q-Level
339 series		Interference Suppression Film Capacitors MKP Radial Potted Type	X2-Class; 0.001 to 4.7 μ F AC 275 V; DC 630V; Temp=110°C;	TH / Radial 7.5 to 27.5mm lead pitch	

Y-cap

Product Name	Status	Description	Features	Package	Q-Level
VY1		Ceramic Disc Capacitors; Y-Capacitor; Safety Standard Approved Disc Capacitor;	C=10 pF to 4700 pF; (Y1):500 V (AC), 50 Hz; Temp=- 40 °C to + 125 °C;	TH / Radial 10mm Lead Pitch	
VY2		Ceramic Disc Capacitors; Y-Capacitor; Safety Standard Approved Disc Capacitor;	C=10 pF to 0.01 μ F; (Y2):300 V (AC), 50 Hz; Temp=- 40 °C to + 125 °C;	TH / Radial 5-10mm Pitch	

Switch Mode Power Supply : DESKTOP POWER, Feedback Loop

Multilayer Ceramic Chip Capacitors

Product Name	Status	Description	Features	Package	Q-Level
K10		Multilayer Ceramic K10 Capacitors Dipped; Radial;	COG(NPO)10-1000pF;50/100V X7R=100pF-0.1μF;50/100V Y5V=1pF-0.1μF;50V	TH / Radial L2,H5,K2,K5	

OptoCoupler

Product Name	Status	Description	Features	Package	Q-Level
SFH617A		Optocoupler; Phototransistor Output; High Reliability;	VISO=5300VRMS; Tamb: -55 to +110°C; CTR:40 to 320%	TH / DIP DIP4	
SFH690CT		Optocoupler; Phototransistor Output;	VISO=3750VRMS; Tamb: -55 to +100°C; CTR:50 to 400%	SMD SOP-4	CSA 93751 UL1577 BSI
TCET1104		Optocoupler; Phototransistor Output; High Temperature Capable;	VISO=5000VRMS; Tamb: -40 to +100°C; CTR:50 to 600%	TH / DIP DIP4	
TCET1114		Optocoupler; Phototransistor Output; High Temperature Capable;	VISO=5000VRMS; Tamb: -40 to +100°C; CTR:50 to 600%	TH / DIP DIP4	

Switch Diode

Product Name	Status	Description	Features	Package	Q-Level
1N4007		General Purpose Plastic Rectifier	IF(AV):1.0 A; VRRM:= 50V-1000V; IFSM=30A; VF=1.1 V;	TH / Axial DO-204AL (DO-41)	
1N4148		Small Signal Fast Switching Diodes	VRRM:= 100V;VR: = 75V; IFSM=2A; IF=300mA; IFAV=150mA;Ptot=500mW;	TH / Axial DO-35 Glass Case	

Zener Diode

Product Name	Status	Description	Features	Package	Q-Level
BZX384		Small Signal Zener Diodes	Vz = 2.4V to 75V; Ptot = 200mW; Tj max= 150°C;	SMD SOD323 Plastic Case	
TLZ		Small Signal Zener Diodes	Vz: = 2.4V to 56V Ptot = 500mW; Tj max = 175°C	SMD SOD80 MiniMELF	
TZX		Small Signal Zener Diodes	Vz: = 2.4V to 36V Ptot = 500mW; Tj max = 175°C	TH / Axial DO-35 Glass Case	

Switch Mode Power Supply : DESKTOP POWER, Input Rectification

Bridge Rectifier

Product Name	Status	Description	Features	Package	Q-Level
BU1006	NEW	Single-Phase Bridge Rectifier; High Current Density;	IF(av)=10A; Vf=0.88V; Vrrm=600V-1000V; Ifsm=120A Tjmax=150°C;	TH / SIP BU	UL 1557 E309391
BU1506	NEW	Single-Phase Bridge Rectifier; High Current Density;	IF(av)=15A; Vf=0.87V; Vrrm=600V-1000V; Ifsm=200A Tjmax=150°C;	TH / SIP BU	UL 1557 E309391
GBU6J		Single-Phase Bridge Rectifiers; Glass Passivated;	IF(av)=6A; Vf=1V; Vrrm=50V-1000V; Ifsm=175A Tjmax=150°C;	TH / SIP GBU	
GBU8J		Single-Phase Bridge Rectifiers; Glass Passivated;	IF(av)=8A; Vf=1V; Vrrm=50V-1000V; Ifsm=200A Tjmax=150°C;	TH / SIP GBU	

Switch Mode Power Supply : DESKTOP POWER, Output Filter

Aluminum cap

Product Name	Status	Description	Features	Package	Q-Level
037RSM		Aluminum Capacitors; Radial; Standard Miniature;	0.47-10 000 μ F; 6.3-100V; Temp. Range= -40-85°C; Life at 85°C=2500h	TH / Radial 5x11 to 16x31mm	
136RVI		Aluminum Capacitors; Radial; Very Low Impedance;	22-10 000 μ F; Vr=10-100V; Temp. Range= -55 -+105°C; Life@105°C=4000h-10,000h	TH / Radial 10x12 to 18x35mm	

Multilayer Ceramic Chip Capacitors

Product Name	Status	Description	Features	Package	Q-Level
K10		Multilayer Ceramic K10 Capacitors Dipped; Radial;	COG(NPO)10-1000pF;50/100V X7R=100pF-0.1 μ F;50/100V Y5V=1pF-0.1 μ F;50V	TH / Radial L2,H5,K2,K5	

Switch Mode Power Supply : DESKTOP POWER, Output Rectification

Low Voltage MOSFETs

Product Name	Status	Description	Features	Package	Q-Level
SUP90N08-4m8P	NEW	N-Channel 75-V (D-S) MOSFET	V _{dss} =75V; I _D =90A; r _{DS(on)} =0.0048Ω Q _g =105nC;	TH / Radial TO-220AB	
SUP90N10-8m8P	NEW	N-Channel 100-V (D-S) 175 °C MOSFET	V _{dss} =100V; I _D =90A; r _{DS(on)} =0.008Ω	TH / Radial TO-220AB	

Schottky

Product Name	Status	Description	Features	Package	Q-Level
M30L40C	NEW	Dual Common-Cathode Schottky Rectifier	IF(AV)=2 x 15A;VF=0.413V; VRRM=40 V; Tj max.=150 °C;	TH / Radial TO-220AB	
M30L45C	NEW	Dual Common-Cathode Schottky Rectifier	IF(AV)=2 x 15A;VF=0.413V; VRRM=45 V; Tj max.=150 °C;	TH / Radial TO-220AB	
M6045C		Dual Common-Cathode Schottky Rectifier	IF(AV)=2x30A;VF=0.51-0.56 VRRM=35 to 60 V; Tj max.=150 °C;	TH / Radial TO-220AB	
V20100C		Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 10A; VF=0.58V; Vrrm=100V; Tj max.=150 °C;	TH / Radial TO-220AB; TO-262AA	
V20100C		Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 10A; VF=0.58V; Vrrm=100V; Tj max.=150 °C;	SMD TO-263AB D2PAK	
V30100C		Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 15A;VF=0.627V; Vrrm=100V; Tj max.=150 °C;	TH / Radial TO-220AB	
V40100C	NEW	Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	IF(AV)=2 x 205A;VF=0.61V; VRRM=100 V; Tj max.=150 °C;	TH / Radial TO-220AB	

Switch Mode Power Supply : DESKTOP POWER, PFC

600V Ultra Fast Diode

Product Name	Status	Description	Features	Package	Q-Level
UH15JT	NEW	High Voltage Ultrafast Rectifier	IF(av)=15A; Vf=1.4V; Vrrm=600V;Trr=30nS; Tj max.=175 °C;	TH / Radial TO-220AC	
UH15JT	NEW	High Voltage Ultrafast Rectifier	IF(av)=15A; Vf=1.4V; Vrrm=600V;Trr=30nS; Tj max.=175 °C;	SMD TO-263AB D2PAK	
UH8JT	NEW	High Voltage Ultrafast Rectifier	IF(av)=8A; Vf=1.47V; Vrrm=600V;Trr=25nS; Tj max.=175 °C;	TH / Radial TO-220AC	

General Rectifier

Product Name	Status	Description	Features	Package	Q-Level
1N5406		General-purpose Plastic Rectifier; Tj max = 150 °C;	IF(AV): = 3A; VRRM:= 50V-1000V; IFSM=200A;Vf=1.2V;	TH / Axial DO-201AD	

High Voltage MOSFETs

Product Name	Status	Description	Features	Package	Q-Level
IRFB17N60KPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem.	Vdss=600V; ID=17A; rDS(on)=0.35Ω; Qg=99nC;	TH / Radial TO-220AB	

High Voltage Resistor

Product Name	Status	Description	Features	Package	Q-Level
VR25		High Ohmic/High Voltage Resistors	High pulse loading cap.; Small size	TH / Axial 0207 A5;A2;A1;R5;N4	

Switch Mode Power Supply : DESKTOP POWER, PWM

High Voltage MOSFETs

Product Name	Status	Description	Features	Package	Q-Level
IRFB17N50LPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem. Low Soft Diode Recovery; ZVS and HF-Circ	Vdss=500V; Qg=1309nC; ID=16A; rDS(on)=0.28Ω; Low Trr=170ns	TH / Radial TO-220AB	
IRFB20N50KPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem. Low RDS(on)	Vdss=500V; ID=20A; rDS(on)=0.21Ω; Qg=110nC;	TH / Radial TO-220AB	
IRFBE30PBF		SMPS MOSFET; HEXFET® Power MOSFET; Fast Switching; Low r(DS)on; Cost effe.; Low thermal resistance;	Vdss=900V; ID=3.6A; rDS(on)=3.7Ω; Qg=78nC;	TH / Radial TO-220AB	
IRFBF30PBF		SMPS MOSFET; HEXFET® Power MOSFET; Fast Switching; Low r(DS)on; Cost effe.; Low thermal resistance;	Vdss=800V; ID=4.1A; rDS(on)=35Ω; Qg=78nC;	TH / Radial TO-220AB	

Switch Mode Power Supply : DESKTOP POWER, Snubber

Switch Diode

Product Name	Status	Description	Features	Package	Q-Level
1N4007		General Purpose Plastic Rectifier	IF(AV):1.0 A; VRRM:= 50V-1000V; IFSM=30A; VF=1.1 V;	TH / Axial DO-204AL (DO-41)	
1N5408		General-purpose Plastic Rectifier; Tj max = 150 °C;	IF(AV): = 3A; VRRM:= 50V-1000V; IFSM=200A; Vf=1.2V;	TH / Axial DO-201AD	
BYV26EGP		Glass Passivated Ultrafast Rectifier	IF(AV):1.0 A; VF:1.3 V; Vrrm=800V/1000V; Ifsm=30A Trr = 75nS; Tjmax=175°C;	TH / Axial DO-204AC (DO-15)	
RS1PD	NEW	Fast Switching Rectifier High Current Density; SMD; Glass Passivated;	IF(AV):1.0 A; VF:1.3 V; VRRM:100V-600V; IFSM:30A; Trr:=150-250ns;	SMD DO-220AA (SMP)	

TVS

Product Name	Status	Description	Features	Package	Q-Level
1.5KE		TRANSZORB® Transient Voltage Suppressors Tj max = 175°C	V(BR) Unidirec.:6.8-540V V(BR) Bidirec.:6.8-440V; PPPM:1500W; PD:6.5W	TH / Axial 1.5KE	
P4KE		TRANSZORB® Transient Voltage Suppressors Tj max:175 °C;	V(BR)Unidirec.:6.8V-540V; V(BR) Bidirec.:6.8V-440V PPPM:=400W; PD:= 1W;	TH / Axial DO-204AL (DO-41)	
P6KE		TRANSZORB® Transient Voltage Suppressors Tj max:175 °C;	V(BR)Unidirec.:6.8V-540V; V(BR) Bidirec.:6.8V-440V PPPM:=600W; PD:= 5W;	TH / Axial DO-204AC (DO-15)	

Switch Mode Power Supply : SERVER POWER, Buck Capacitance

Snapin Aluminum cap

Product Name	Status	Description	Features	Package	Q-Level
094 series	NEW	Aluminum Capacitors; Snap-in; Power Miniaturized; Long-Life;	47-680 μ F; Vr=400V/450V; Temp. Range= -25 -+105°C; Life at 105°C=2000h	TH / Snap-In 22x25 to 35x50mm	

Switch Mode Power Supply : SERVER POWER, EMI Filtering

X-cap

Product Name	Status	Description	Features	Package	Q-Level
339 series		Interference Suppression Film Capacitors MKP Radial Potted Type	X2-Class; 0.001 to 4.7 μ F AC 275 V; DC 630V; Temp=110°C;	TH / Radial 7.5 to 27.5mm lead pitch	

Y-cap

Product Name	Status	Description	Features	Package	Q-Level
VY1		Ceramic Disc Capacitors; Y-Capacitor; Safety Standard Approved Disc Capacitor;	C=10 pF to 4700 pF; (Y1):500 V (AC), 50 Hz; Temp=- 40 °C to + 125 °C;	TH / Radial 10mm Lead Pitch	
VY2		Ceramic Disc Capacitors; Y-Capacitor; Safety Standard Approved Disc Capacitor;	C=10 pF to 0.01 μ F; (Y2):300 V (AC), 50 Hz; Temp=- 40 °C to + 125 °C;	TH / Radial 5-10mm Pitch	

Switch Mode Power Supply : SERVER POWER, Feedback Loop

Multilayer Ceramic Chip Capacitors

Product Name	Status	Description	Features	Package	Q-Level
K10		Multilayer Ceramic K10 Capacitors Dipped; Radial;	COG(NPO)10-1000pF;50/100V X7R=100pF-0.1μF;50/100V Y5V=1pF-0.1μF;50V	TH / Radial L2,H5,K2,K5	

OptoCoupler

Product Name	Status	Description	Features	Package	Q-Level
SFH617A		Optocoupler; Phototransistor Output; High Reliability;	VISO=5300VRMS; Tamb: -55 to +110°C; CTR:40 to 320%	TH / DIP DIP4	
SFH690CT		Optocoupler; Phototransistor Output;	VISO=3750VRMS; Tamb: -55 to +100°C; CTR:50 to 400%	SMD SOP-4	CSA 93751 UL1577 BSI
TCET1104		Optocoupler; Phototransistor Output; High Temperature Capable;	VISO=5000VRMS; Tamb: -40 to +100°C; CTR:50 to 600%	TH / DIP DIP4	
TCET1114		Optocoupler; Phototransistor Output; High Temperature Capable;	VISO=5000VRMS; Tamb: -40 to +100°C; CTR:50 to 600%	TH / DIP DIP4	

Switch Diode

Product Name	Status	Description	Features	Package	Q-Level
1N4007		General-purpose Plastic Rectifier; Tj max = 150 °C;	IF(AV):1.0 A; VRRM:= 50V-1000V; IFSM=30A; VF=1.1 V;	TH / Axial DO-204AL (DO-41)	
1N4148		Small Signal Fast Switching Diodes	VRRM:= 100V;VR: = 75V; IFSM=2A; IF=300mA; IFAV=150mA;Ptot=500mW;	TH / Axial DO-35 Glass Case	

Zener Diode

Product Name	Status	Description	Features	Package	Q-Level
BZX384		Small Signal Zener Diodes	Vz = 2.4V to 75V; Ptot = 200mW; Tj max= 150°C;	SMD SOD323 Plastic Case	
TLZ		Small Signal Zener Diodes	Vz: = 2.4V to 56V Ptot = 500mW; Tj max = 175°C	SMD SOD80 MiniMELF	
TZX		Small Signal Zener Diodes	Vz: = 2.4V to 36V Ptot = 500mW; Tj max = 175°C	TH / Axial DO-35 Glass Case	

Switch Mode Power Supply : SERVER POWER, Input Rectification

Bridge Rectifier

Product Name	Status	Description	Features	Package	Q-Level
BU1506	NEW	Single-Phase Bridge Rectifier; High Current Density;	IF(av)=15A; Vf=0.87V; Vrrm=600V-1000V; Ifsm=200A Tjmax=150°C;	TH / SIP BU	UL 1557 E309391
BU1508	NEW	Single-Phase Bridge Rectifier; High Current Density;	IF(av)=15A; Vf=0.87V; Vrrm=600V-1000V; Ifsm=200A Tjmax=150°C;	TH / SIP BU	UL 1557 E309391
BU2506	NEW	Single-Phase Bridge Rectifier; High Current Density;	IF(av)=25A; Vf=0.87V; Vrrm=600V-800V; Ifsm=300A Tjmax=150°C;	TH / SIP BU	UL 1557 E309391
BU2508	NEW	Single-Phase Bridge Rectifier; High Current Density;	IF(av)=25A; Vf=0.87V; Vrrm=600V-800V; Ifsm=300A Tjmax=150°C;	TH / SIP BU	UL 1557 E309391
GSIB1560		Single-Phase Bridge Rectifiers; Single In-Line;	IF(av)=15A; Vf=0.95V; Vrrm=200V-800V; Ifsm=300A Tjmax=150°C;	TH / SIP GSIB-5S	
GSIB1580		Single-Phase Bridge Rectifiers; Single In-Line;	IF(av)=15A; Vf=0.95V; Vrrm=200V-800V; Ifsm=300A Tjmax=150°C;	TH / SIP GSIB-5S	
GSIB2560		Single-Phase Bridge Rectifiers; Single In-Line;	IF(av)=25A; Vf=1V; Vrrm=200V-800V; Ifsm=350A Tjmax=150°C;	TH / SIP GSIB-5S	
GSIB2580		Single-Phase Bridge Rectifiers; Single In-Line;	IF(av)=25A; Vf=1V; Vrrm=200V-800V; Ifsm=350A Tjmax=150°C;	TH / SIP GSIB-5S	

Switch Mode Power Supply : SERVER POWER, OringFET

Low Voltage MOSFETs

Product Name	Status	Description	Features	Package	Q-Level
Si4398DY		N-Ch. Reduced Qg, Fast Switching WFET	Vdss=20V; ID=25A; rDS(on)=0.0028Ω Qg=34nC;	SMD SO-8	
Si4438DY		N-Channel 30-V (D-S) MOSFET	Vdss=30V; ID=36A; rDS(on)=0.0027Ω Qg=41nC;	SMD SO-8	
Si7658DP	NEW	N-Channel 30-V (D-S) MOSFET	Vdss=30V; ID=60A; rDS(on)=0.0024Ω Qg=48.5nC;	SMD PowerPAK SO-8	
Si7866ADP		N-Channel 20-V (D-S) MOSFET	Vdss=20V; ID=40A; rDS(on)=0.0024Ω Qg=39nC;	SMD PowerPAK SO-8	
SiE808DF	NEW	N-Channel 20-V (D-S) MOSFET	Vdss=20V; ID=220A; rDS(on)=0.0016Ω Qg=46nC;	SMD PolarPAK	
SUM110N04-2M3L		N-Channel 40-V (D-S) 175°C MOSFET	Vdss=40V; ID=110A; rDS(on)=0.0023Ω Qg=240nC;	SMD TO-263AB D2PAK	

Switch Mode Power Supply : SERVER POWER, Output Filter

Aluminum cap

Product Name	Status	Description	Features	Package	Q-Level
037RSM		Aluminum Capacitors; Radial; Standard Miniature;	0.47-10 000 μ F; 6.3-100V; Temp. Range= -40-85°C; Life at 85°C=2500h	TH / Radial 5x11 to 16x31mm	
136RVI		Aluminum Capacitors; Radial; Very Low Impedance;	22-10 000 μ F; Vr=10-100V; Temp. Range= -55 -+105°C; Life@105°C=4000h-10,000h	TH / Radial 10x12 to 18x35mm	

Multilayer Ceramic Chip Capacitors

Product Name	Status	Description	Features	Package	Q-Level
K10		Multilayer Ceramic K10 Capacitors Dipped; Radial;	COG(NPO)10-1000pF;50/100V X7R=100pF-0.1 μ F;50/100V Y5V=1pF-0.1 μ F;50V	TH / Radial L2,H5,K2,K5	

Switch Mode Power Supply : SERVER POWER, Output Rectification

Low Voltage MOSFETs

Product Name	Status	Description	Features	Package	Q-Level
SUP90N08-4m8P	NEW	N-Channel 75-V (D-S) MOSFET	V _{dss} =75V; I _D =90A; r _{DS(on)} =0.0048Ω Q _g =105nC;	TH / Radial TO-220AB	
SUP90N10-8m8P	NEW	N-Channel 100-V (D-S) 175 °C MOSFET	V _{dss} =100V; I _D =90A; r _{DS(on)} =0.008Ω	TH / Radial TO-220AB	

Schottky

Product Name	Status	Description	Features	Package	Q-Level
M30L45C	NEW	Dual Common-Cathode Schottky Rectifier	I _{F(AV)} =2 x 15A; V _F =0.413V; V _{RRM} =40 V; T _{j max.} =150 °C;	TH / Radial TO-220AB	
M6045C		Dual Common-Cathode Schottky Rectifier	I _{F(AV)} =2x30A; V _F =0.51-0.56 V _{RRM} =35 to 60 V; T _{j max.} =150 °C;	TH / Radial TO-220AB	
V30100C		Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	I _{F(AV)} =2 x 15A; V _F =0.627V; V _{rrm} =100V; T _{j max.} =150 °C;	TH / Radial TO-220AB	
V40100C	NEW	Trench MOS Barrier Schottky Rectifier; DUAL; High-Voltage	I _{F(AV)} =2 x 205A; V _F =0.61V; V _{RRM} =100 V; T _{j max.} =150 °C;	TH / Radial TO-220AB	

Switch Mode Power Supply : SERVER POWER, PFC

600V Ultra Fast Diode

Product Name	Status	Description	Features	Package	Q-Level
8STH06FP	NEW	Hyperfast Rectifier	IF(av)=8A; Vf=2V; Vrrm=600V; Trr = 17nS; Tjmax=175°C;	TH / Radial ITO-220AB	
UH15JT	NEW	High Voltage Ultrafast Rectifier	IF(av)=15A; Vf=1.4V; Vrrm=600V;Trr=30nS; Tj max.=175 °C;	TH / Radial TO-220AC	
UH15JT	NEW	High Voltage Ultrafast Rectifier	IF(av)=15A; Vf=1.4V; Vrrm=600V;Trr=30nS; Tj max.=175 °C;	SMD TO-263AB D2PAK	
UH8JT	NEW	High Voltage Ultrafast Rectifier	IF(av)=8A; Vf=1.47V; Vrrm=600V;Trr=25nS; Tj max.=175 °C;	TH / Radial TO-220AC	

General Rectifier

Product Name	Status	Description	Features	Package	Q-Level
1N5406		General-purpose Plastic Rectifier; Tj max = 150 °C;	IF(AV): = 3A; VRRM:= 50V-1000V; IFSM=200A;Vf=1.2V;	TH / Axial DO-201AD	

High Voltage MOSFETs

Product Name	Status	Description	Features	Package	Q-Level
IRFB17N60KPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem.	Vdss=600V; ID=17A; rDS(on)=0.35Ω; Qg=99nC;	TH / Radial TO-220AB	
IRFPS40N60KPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem. Low rDS(on); for hard prim. Switch / PFC	Vdss=600V; ID=40A; rDS(on)=0.110Ω; Qg=330nC	TH / Radial Super TO-247AC	

High Voltage Resistor

Product Name	Status	Description	Features	Package	Q-Level
VR25		High Ohmic/High Voltage Resistors	High pulse loading cap.; Small size	TH / Axial 0207 A5;A2;A1;R5;N4	

Switch Mode Power Supply : SERVER POWER, PWM

High Voltage MOSFETs

Product Name	Status	Description	Features	Package	Q-Level
IRFB17N60KPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem.	Vdss=600V; ID=17A; rDS(on)=0.35Ω; Qg=99nC;	TH / Radial TO-220AB	
IRFB20N50KPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem. Low RDS(on)	Vdss=500V; ID=20A; rDS(on)=0.21Ω; Qg=110nC;	TH / Radial TO-220AB	
IRFPS38N60LPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem. Low Soft Diode Recovery; ZVS and HF-Circ	Vdss=600V; ID=38A; rDS(on)=0.120Ω; Low Trr=170ns; Qg=320nC;	TH / Radial Super TO-247AC	
IRFPS40N50LPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem. Low Soft Diode Recovery; ZVS and HF-Circ	Vdss=500V; ID=46A; rDS(on)=0.087Ω; Low Trr=170ns; Qg=380nC;	TH / Radial Super TO-247AC	
IRFPS40N60KPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem. Low rDS(on); for hard prim. Switch / PFC	Vdss=600V; ID=40A; rDS(on)=0.110Ω; Qg=330nC	TH / Radial Super TO-247AC	
IRFPS43N50KPBF	NEW	SMPS MOSFET; HEXFET® Power MOSFET; Low Qg results in Simple Drive Requirem. Low rDS(on); for hard Switched / HF-Sw.	Vdss=500V; ID=47A; rDS(on)=0.087Ω; Qg=350nC	TH / Radial Super TO-247AC	

Switch Mode Power Supply : SERVER POWER, Snubber

Switch Diode

Product Name	Status	Description	Features	Package	Q-Level
1N4007		General Purpose Plastic Rectifier	IF(AV):1.0 A; VRRM:= 50V-1000V; IFSM=30A; VF=1.1 V;	TH / Axial DO-204AL (DO-41)	
1N5408		General-purpose Plastic Rectifier; Tj max = 150 °C;	IF(AV): = 3A; VRRM:= 50V-1000V; IFSM=200A; Vf=1.2V;	TH / Axial DO-201AD	
BYV26EGP		Glass Passivated Ultrafast Rectifier	IF(AV):1.0 A; VF:1.3 V; Vrrm=800V/1000V; Ifsm=30A Trr = 75nS; Tjmax=175°C;	TH / Axial DO-204AC (DO-15)	
RS1PD	NEW	Fast Switching Rectifier High Current Density; SMD; Glass Passivated;	IF(AV):1.0 A; VF:1.3 V; VRRM:100V-600V; IFSM:30A; Trr:=150-250ns;	SMD DO-220AA (SMP)	

TVS

Product Name	Status	Description	Features	Package	Q-Level
1.5KE		TRANSZORB® Transient Voltage Suppressors Tj max = 175°C	V(BR) Unidirec.:6.8-540V V(BR) Bidirec.:6.8-440V; PPPM:1500W; PD:6.5W	TH / Axial 1.5KE	
P4KE		TRANSZORB® Transient Voltage Suppressors Tj max:175 °C;	V(BR)Unidirec.:6.8V-540V; V(BR) Bidirec.:6.8V-440V PPPM:=400W; PD:= 1W;	TH / Axial DO-204AL (DO-41)	
P6KE		TRANSZORB® Transient Voltage Suppressors Tj max:175 °C;	V(BR)Unidirec.:6.8V-540V; V(BR) Bidirec.:6.8V-440V PPPM:=600W; PD:= 5W;	TH / Axial DO-204AC (DO-15)	

