

Switchmode Schottky Barrier Power Rectifiers

Using the Schottky Barrier principle with high temperature operation metal. The proprietary barrier technology allows for reliable operation up to 150°C junction temperature. Typical application are in switching Mode Power Supplies such as adaptators, Photovoltaic Solar cell protection, free-wheeling and polarity protection diodes.

Features

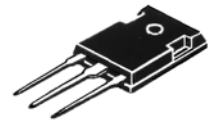
- * Ultra Low Forward Voltage.
- * Low Switching noise.
- * High Current Capacity
- * Low Power Loss & High efficiency.
- * 150°C Operating Junction Temperature
- * Low Stored Charge Majority Carrier Conduction.
- * Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O



* In compliance with EU RoHs 2002/95/EC directives

SCHOTTKY BARRIER RECTIFIERS

**30 AMPERES
45VOLTS**



TO-3P

MAXIMUM RATINGS

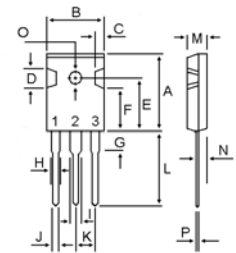
Characteristic	Symbol	S30D45CL	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	45	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	$V_{R(RMS)}$	31.5	V
Average Rectifier Forward Current (per diode)	$I_{F(AV)}$	15	A
Total Device (Rated V_R), $T_C=125^\circ\text{C}$		30	
Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz)	I_{FM}	30	A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfware, single phase, 60Hz)	I_{FSM}	275	A
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$

THERMAL RESISTANCES

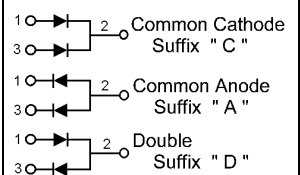
Typical Thermal Resistance junction to case(per diode)	$R_{\theta j-c}$	3.2	$^\circ\text{C}/\text{w}$
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ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	S30D45CL	Unit
Maximum Instantaneous Forward Voltage (per diode) ($I_F=0.1\text{ Amp } T_C=25^\circ\text{C}$) ($I_F=7.5\text{ Amp } T_C=25^\circ\text{C}$) ($I_F=15\text{ Amp } T_C=25^\circ\text{C}$)	V_F	Min Typ. Max. --- 0.20 0.24 --- 0.36 0.38 --- 0.43 0.49	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25^\circ\text{C}$) (Rated DC Voltage, $T_C=100^\circ\text{C}$)	I_R	0.5 60	mA



DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70



S30D45CL

FIG-1 FORWARD CURRENT DERATING CURVE

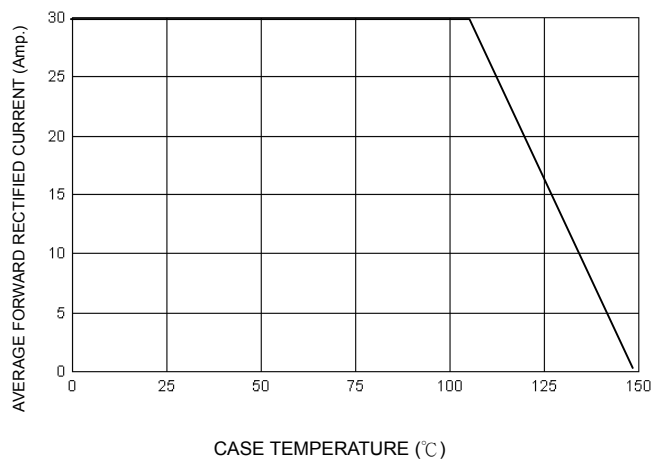


FIG-2 TYPICAL FORWARD CHARACTERISTICS

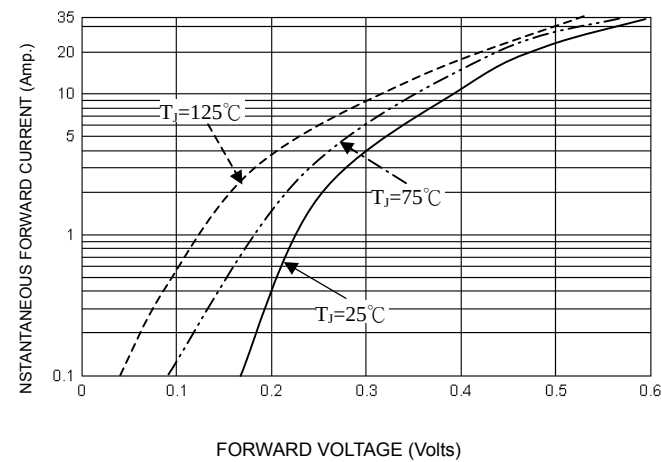


FIG-3 TYPICAL REVERSE CHARACTERISTICS

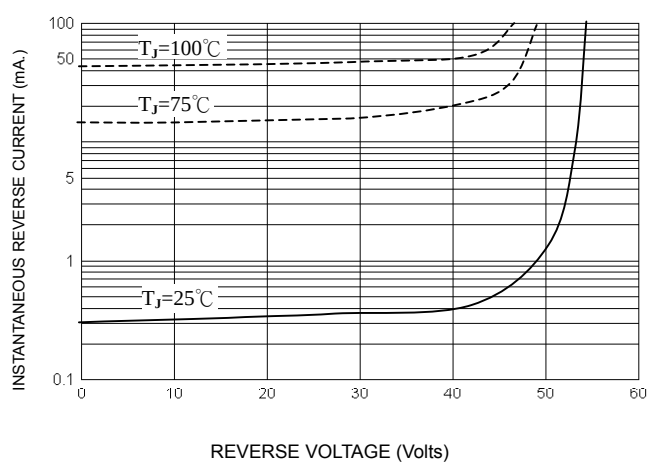


FIG-4 TYPICAL JUNCTION CAPACITANCE

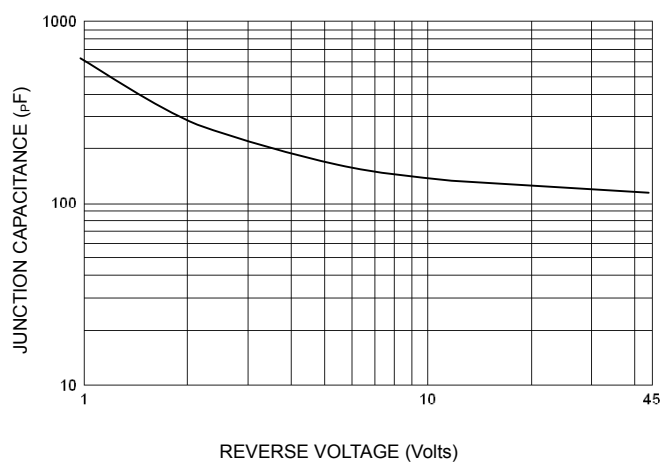


FIG-5 PEAK FORWARD SURGE CURRENT

