

## Schottky Barrier Rectifiers

Using the Schottky Barrier principle with a Molybdenum barrier metal. These state-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes.

### Features

- \* Low Switching noise.
- \* High Current Capacity
- \* Guarantee Reverse Avalanche.
- \* Guard-Ring for Stress Protection.
- \* 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
- \* *Pb free*
- \* *In compliance with EU RoHs directives*

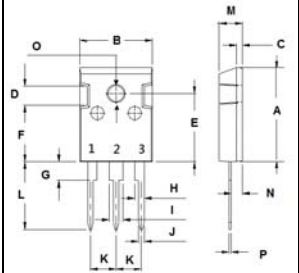


### SCHOTTKY BARRIER RECTIFIERS

**30 AMPERES  
45 VOLTS**



TO-3PS



DIM	MILLIMETERS	
	MIN	MAX
A	19.80	20.20
B	15.45	15.75
C	0.95	1.25
D	3.85	4.15
E	14.15	14.45
F	11.70	12.10
G	3.80	4.20
H	1.80	2.20
I	2.80	3.20
J	1.05	1.35
K	5.26	5.66
L	13.90	14.50
M	4.60	5.00
N	2.35	2.65
O	3.40	3.80
P	0.38	0.62

### MAXIMUM RATINGS

Characteristic	Symbol	S30D45CS	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	45	V
RMS Reverse Voltage	$V_{R(RMS)}$	32	V
Average Rectifier Forward Current Total Device (Rated $V_R$ ), $T_C=100^\circ\text{C}$	$I_{F(AV)}$	15 30	A
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 half-wave, single phase, 60Hz)	$I_{FSM}$	300	A
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage ( $I_F=15$ Amp $T_C=25^\circ\text{C}$ ) ( $I_F=15$ Amp $T_C=125^\circ\text{C}$ )	$V_F$	---	0.53 0.47	0.55 ---	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25^\circ\text{C}$ ) (Rated DC Voltage, $T_C=125^\circ\text{C}$ )	$I_R$	---	0.07 40	0.5 ---	mA

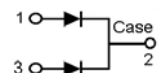


FIG-1 FORWARD CURRENT DERATING CURVE

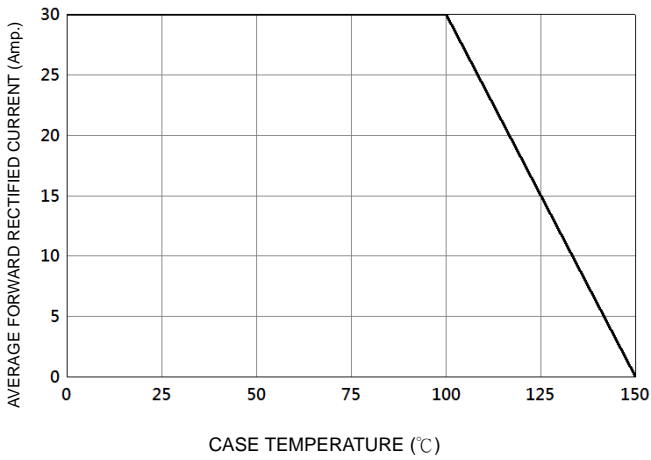


FIG-2 TYPICAL FORWARD CHARACTERISTICS

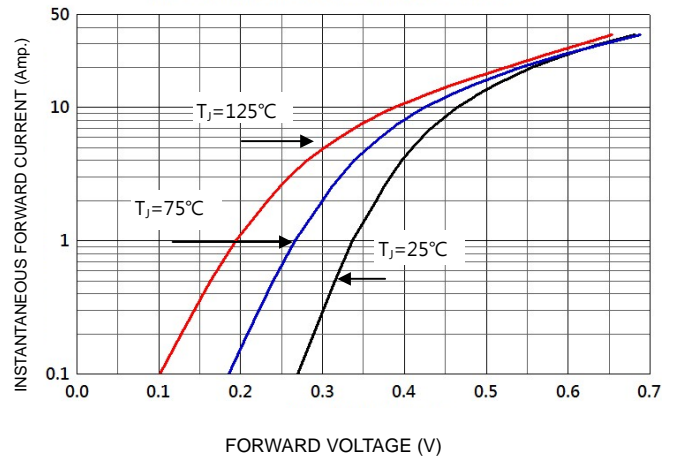


FIG-3 TYPICAL REVERSE CHARACTERISTICS

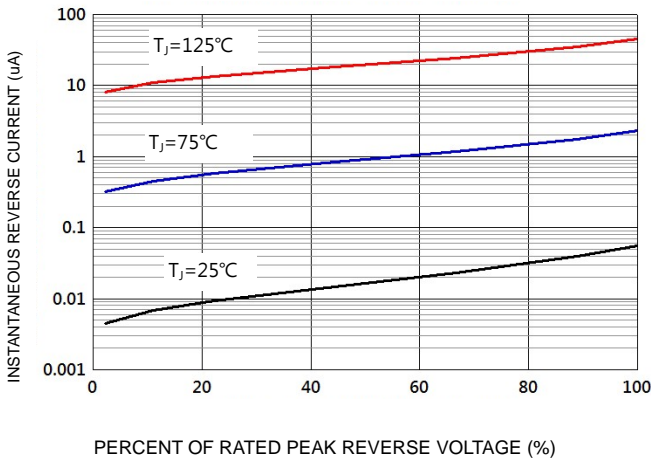


FIG-4 TYPICAL JUNCTION CAPACITANCE

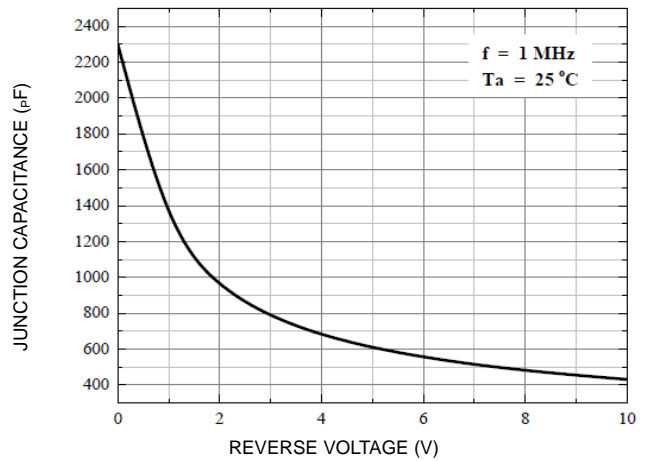
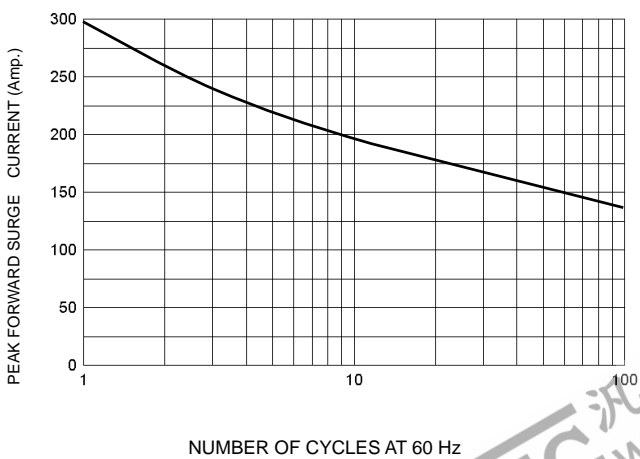


FIG-5 PEAK FORWARD SURGE CURRENT



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