

## SWITCHMODE POWER RECTIFIERS D PAK SURFACE MOUNT POWER PACKAGE

The D PAK Power rectifier employs the Schottky Barrier principle with a Molybdenum barrier metal. These state-of-the-art devices have the following features:

- \* Low Forward Voltage
- \* Low Switching noise
- \* High Surge Capacity
- \* Guarantee Reverse Avalanche
- \* Guard-Ring for Stress Protection
- \* Lower Power Loss & High efficiency
- \* 125 °C Operating Junction Temperature
- \* Lower Stored Charge Majority Carrier Conduction
- \* Similar Size to the industry Standard TO-251 Package
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O
- \* Marking: S2030T-S2045T
- \* Weight: 0.011 ounce, 0.295 gram

### SCHOTTKY BARRIER RECTIFIERS

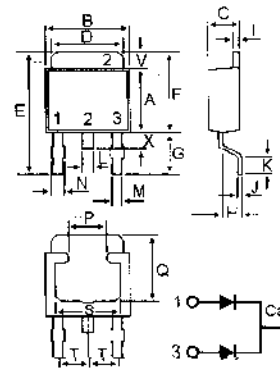
**20 AMPERES  
30-45 VOLTS**



**TO-252AA (DPAK)**

### MAXIMUM RATINGS

Characteristic	Symbol	SBD20				Unit
		30CT	35CT	40CT	45CT	
Peak Repetitive Reverse Voltage	$V_{RRM}$					V
Working Peak Reverse Voltage	$V_{RWM}$	30	35	40	45	
DC Blocking Voltage	$V_R$					
RMS Reverse Voltage	$V_{R(RMS)}$	21	25	28	32	V
Average Rectifier Forward Current Total Device (Rated $V_R$ ), $T_c=100^\circ\text{C}$	$I_{F(AV)}$		10 20			A
Peak Repetitive Forward Current (Rate $V_R$ , Square Wave, 20kHz)	$I_{FM}$		20			A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	$I_{FSM}$		175			A
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$		- 65 to + 125			°C



DIM	MILLMETERS	
	MIN	MAX
A	5.40	5.60
B	6.30	6.70
C	2.20	2.40
D	5.20	5.50
E	9.00	10.00
F	6.60	7.00
G	2.40	3.00
H	0.90	1.50
I	0.45	0.55
J	0.45	0.60
K	0.90	1.50
L	0.70	0.90
M	0.50	0.70
N	0.60	0.90
P	2.70	3.10
Q	5.00	5.40
S	4.80	5.20
T	---	2.30
V	1.20	1.40
X	0.80	1.20

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	SBD20				Unit
		30CT	35CT	40CT	45CT	
Maximum Instantaneous Forward Voltage ( $I_F=10$ Amp, $T_c = 25^\circ\text{C}$ )	$V_F$		0.55			V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_c = 25^\circ\text{C}$ ) (Rated DC Voltage, $T_c = 100^\circ\text{C}$ )	$I_R$		1.0 5.0			mA mA

# SBD2030CT thru SBD2045CT

FIG-1 FORWARD CURRENT DERATING CURVE

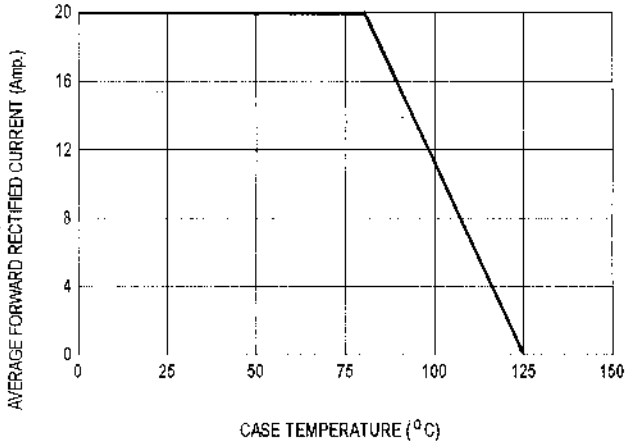


FIG-2 TYPICAL FORWARD CHARACTERISTICS

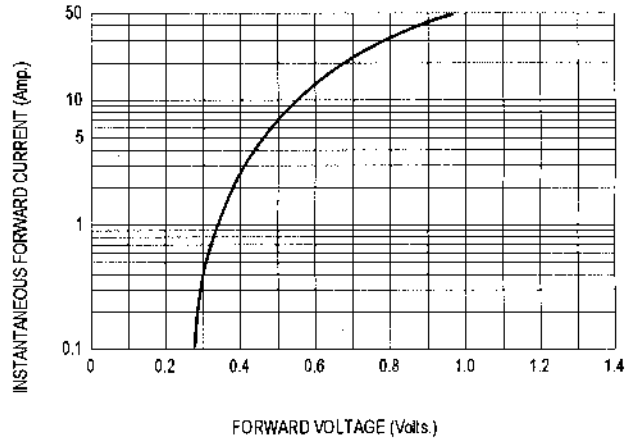


FIG-3 TYPICAL REVERSE CHARACTERISTICS

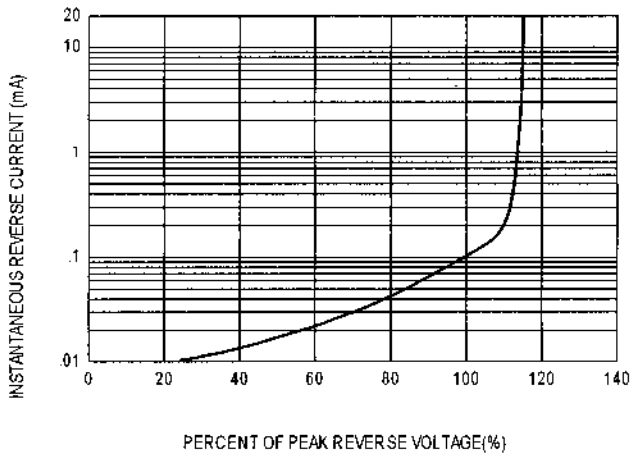


FIG-4 TYPICAL JUNCTION CAPACITANCE

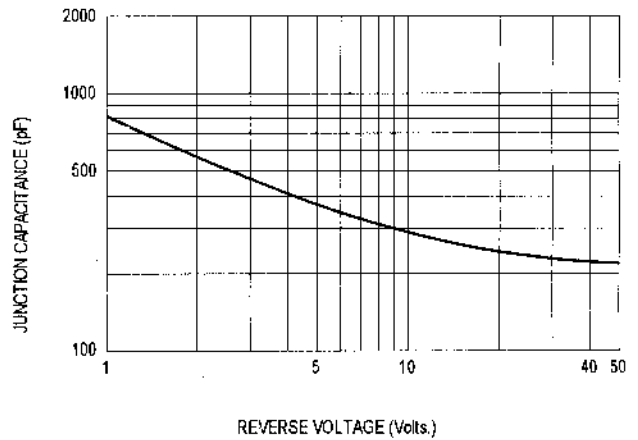


FIG-5 PEAK FORWARD SURGE CURRENT

