30 Amp Ultra Fast Recovery Rectifier 1200 Volts

Features

- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix Designates Compliant. See Ordering Information)
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- High Frequency Operation
- High Surge Forward Current Capability
- Epoxy Meets UL 94 V-0 Flammability Rating
- Planar Structure Die and Soft Recovery Characteristics

Maximum Ratings

- Operating Junction Temperature Range: -55ºC to +150ºC
- Storage Temperature Range: -55ºC to +150ºC
- Typical Thermal Resistance: 0.4°C/W Junction to Case

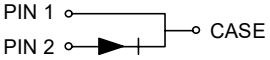
MCC Part Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
MUR30120BS	MUR30120BS	1200V	840V	1200V

Electrical Characteristics @ 25°C Unless Otherwise Specified

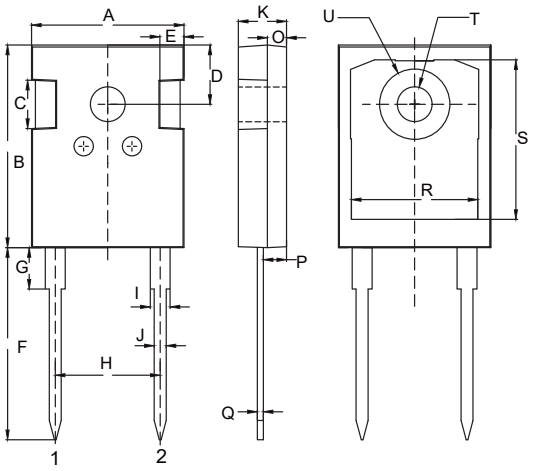
Average Rectified Forward Current	$I_{F(AV)}$	30A	T_C=115ºC	
Peak Forward Surge Current	I_{FSM}	210A	8.3ms,Half Sine	
Instantaneous Forward Voltage	V_F	2.8V(Typ) 3.3V(Max) 2.8V(Max)	I_F=30A; T_J=25ºC I_F=30A; T_J=25ºC I_F=30A; T_J=125ºC	
Maximum Reverse Current At Rated DC Blocking Voltage	I_R	5uA 200uA	T_J=25ºC; T_J=125ºC	
Typical Junction Capacitance	C_J	100pF	Measured at 1.0MHz, V_R=4.0V	
Reverse Recovery Time	t_{rr}	38ns(Typ.) 70ns(Max.)	I_F=0.5A; I_R=1.0A; I_{RR}=0.25A	
		185ns(Typ.) 272ns(Typ.)	T_J=25ºC T_J=125ºC	I_F=30A di_F/dt=-200A/µs V_R=400 V
Peak recovery current	I_{RRM}	5.4A(Typ.) 12.6A(Typ.)	T_J=25ºC T_J=125ºC	
Reverse recovery charge	Q_{rr}	509nC(Typ.) 1722nC(Typ.)	T_J=25ºC T_J=125ºC	

Note:1. High Temperature Solder Exemptions Applied, See EU Directive Annex 7a.

Internal Structure



TO-247AD



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.602	0.642	15.30	16.30	
B	0.799	0.839	20.30	21.30	
C	0.189	0.205	4.80	5.20	
D	0.242		6.15		BSC.
E	0.091	0.106	2.30	2.70	
F	0.768	0.807	19.50	20.50	
G	-----	0.189	-----	4.80	
H	0.428		10.88		BSC.
I	0.075	0.087	1.91	2.21	
J	0.044	0.054	1.11	1.36	
K	0.189	0.205	4.80	5.20	
O	0.073	0.085	1.85	2.15	
P	0.087	0.103	2.21	2.61	
Q	0.020	0.030	0.51	0.75	
R	0.512	0.535	13.00	13.60	
S	0.640	0.663	16.25	16.85	
T	0.134	0.150	3.40	3.80	Φ
U	-----	0.287	-----	7.30	Φ

Curve Characteristics

Fig. 1 - Forward Current Derating Curve

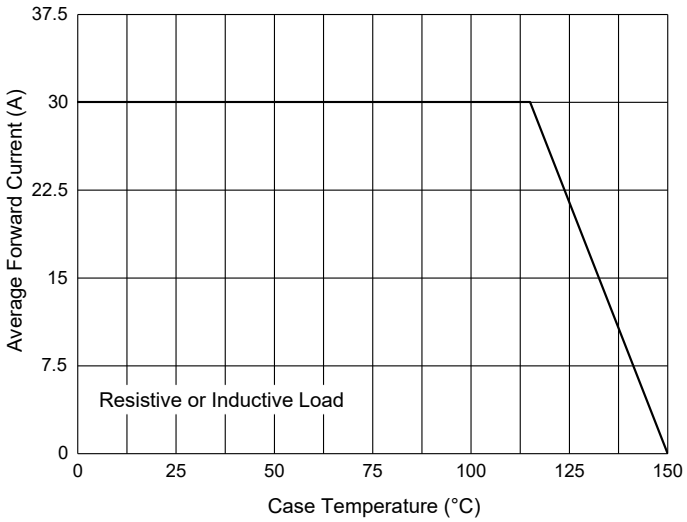


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

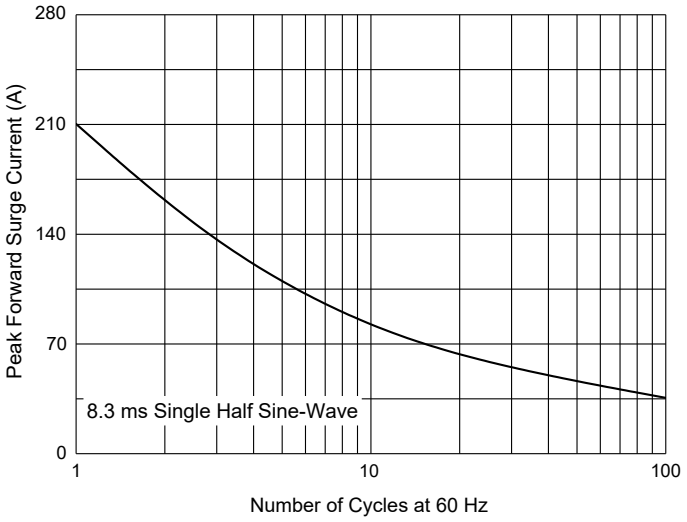


Fig. 3 - Typical Forward Characteristics

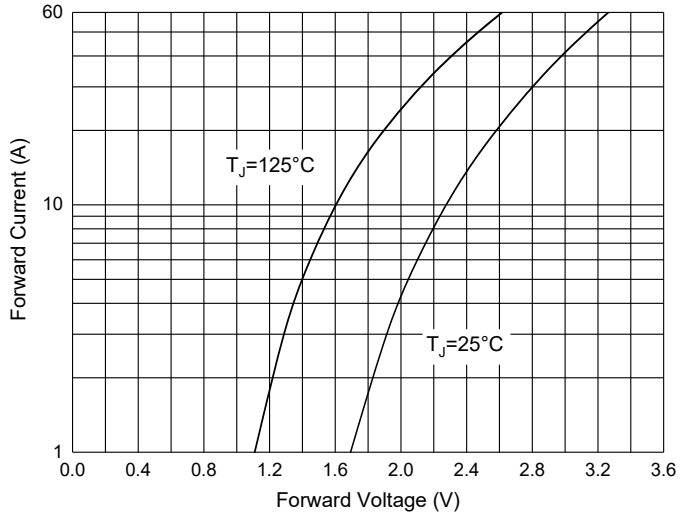


Fig. 4 - Typical Reverse Leakage Characteristics

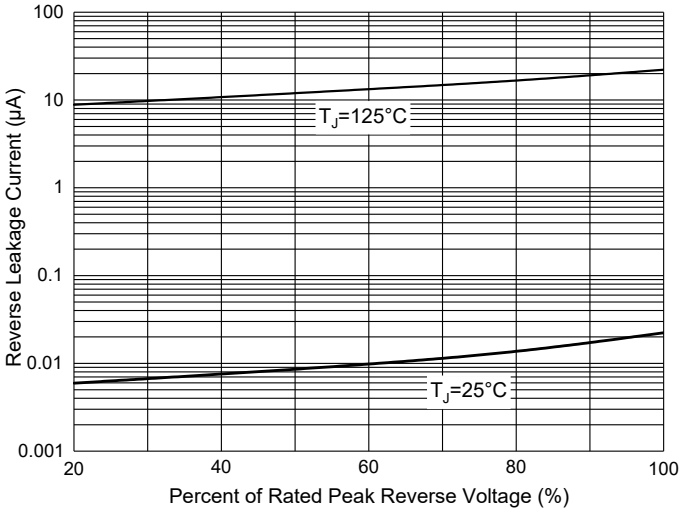
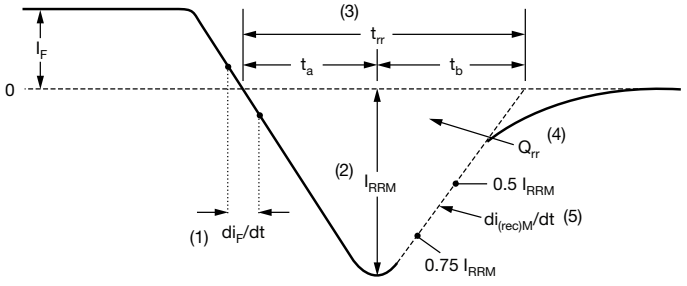


Fig. 5 - Reverse Recovery Waveform and Definitions



(1) di_F/dt - rate of change of current through zero crossing

(2) I_{RRM} - peak reverse recovery current

(3) t_{rr} - reverse recovery time measured from zero crossing point of negative going I_F to point where a line passing through 0.75 I_{RRM} and 0.50 I_{RRM} extrapolated to zero current.

(4) Q_{rr} - area under curve defined by t_{rr} and I_{RRM}

$$Q_{rr} = \frac{t_{rr} \times I_{RRM}}{2}$$

(5) $di_{(rec)M}/dt$ - peak rate of change of current during t_b portion of t_{rr}

Ordering Information

Device	Packing
Part Number-BP	Bulk:30pcs/Tube,360pcs/Box,1.8Kpcs/Carton

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-BP-HF

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