Features

- Zero Reverse Recovery Current
- Merged PiN Schottky (MPS) Diodes Technologies
- Positive Temperature Coefficient
- High-Speed Switching
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. “Green” Device (Note 1)
- Lead Free Finish/RoHS Compliant(Note 2) ("P" Suffix designates RoHS Compliant. See ordering information)

Benefits

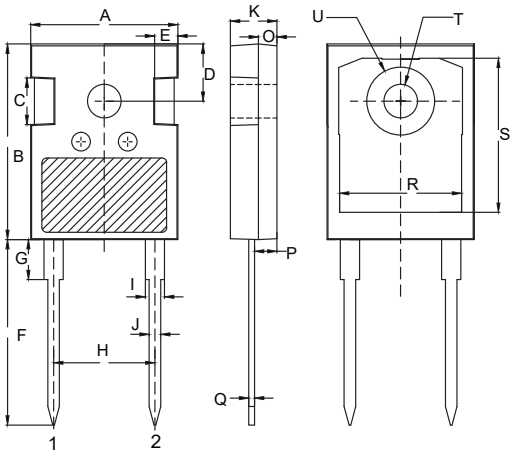
- Temperature-Independent Performance
- Low Switching Loss
- Low Heat Dissipation Requirements

Applications

- Power Factor Correction
- Photovoltaic Inverter
- Motor Drive, Traction
- Electric Car and Charger

20 Amp Silicon Carbide Schottky Diode 1200 Volts

TO-247AD



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.610	0.663	15.50	16.85	
B	0.815	0.839	20.70	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	0.772	0.796	19.62	20.22	
G	-----	0.169	-----	4.30	
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

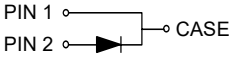
Maximum Ratings

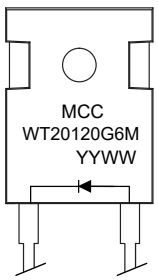
Parameter		Symbol	Rating	Unit
Peak Repetitive Reverse Voltage@ T_j=25°C		V_{RRM}	1200	V
Surge Peak Reverse Voltage@ T_j=25°C		V_{RSM}	1200	V
DC Reverse Voltage@ T_j=25°C		V_{DC}	1200	V
Continuous forward Current	@T_C=25°C	I_F	52	A
	@T_C=135°C		24	
	@T_C=146°C		20	
Non-repetitive Peak Forward Surge Current @T_C=25°C, t_p=10ms, Half Sine Pulse		I_{FSM}	200	A
Power Dissipation	@T_C=25°C	P_D	205	W
	@T_C=110°C		89	
i^2t Value@ T_C=25°C ,tp=10ms		$\int i^2dt$	200	A^2S

Note:1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

Internal Structure:





Device Code:WT20120G6M
YYWW: Date Code (Year & Week)

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Typ.	Max.	Units
Forward Voltage	V_F	I_F=20A, T_J=25°C	1.38	1.60	V
		I_F=20A, T_J=175°C	1.93		V
Reverse Leakage Current	I_R	V_R=1200V, T_J=25°C	3.0	25	μA
		V_R=1200V, T_J=175°C	60		μA
Total Capacitive Charge	Q_C	V_R=800V	100		nC
Total capacitance	C	V_R=0V, f=1MHz	1388		pF
		V_R=400V, f=1MHz	93		pF
		V_R=800V, f=1MHz	74		pF
Capacitance Stored Energy	E_C	V_R=800V	29		μJ

Thermal characteristics

Parameter	Symbol	Min	Typ	Max	Units
Operating Junction Temperature Range	T_J	-55		175	°C
Storage Temperature Range	T_{stg}	-55		175	°C
Thermal Resistance from Junction to Case	Rth_{J-C}		0.73		°C/W

Curve Characteristics

Figure 1. Forward Characteristics

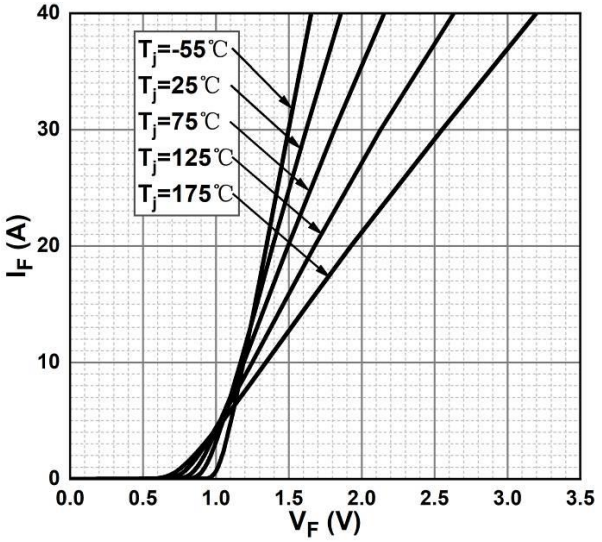


Figure 2. Reverse Characteristics

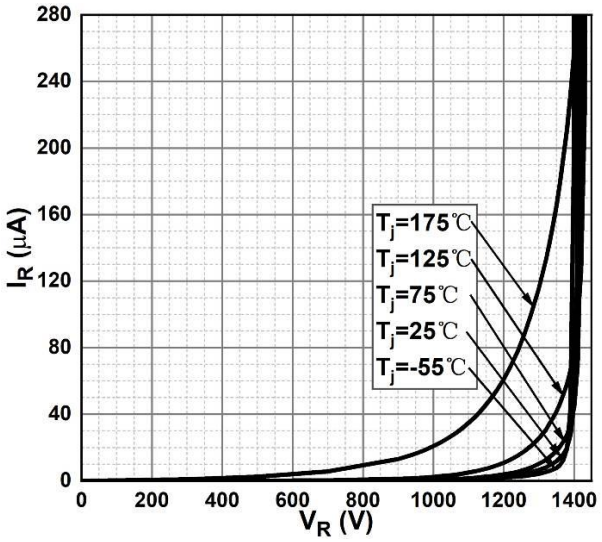


Figure 3. Capacitance vs. Reverse Voltage

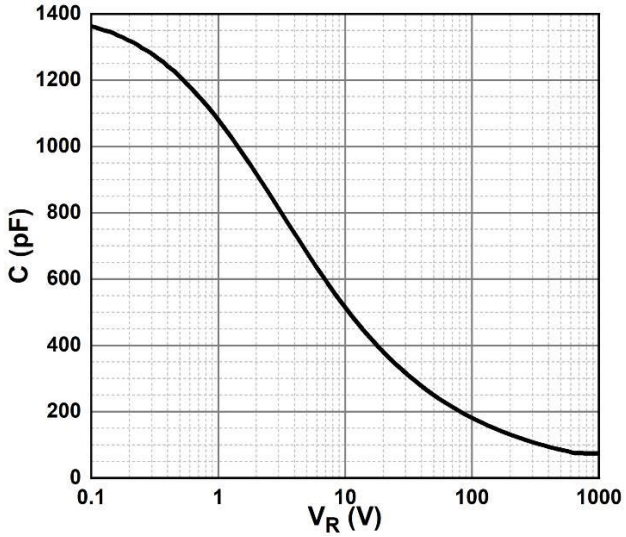


Figure 4. Total Capacitance Charge vs. Reverse Voltage

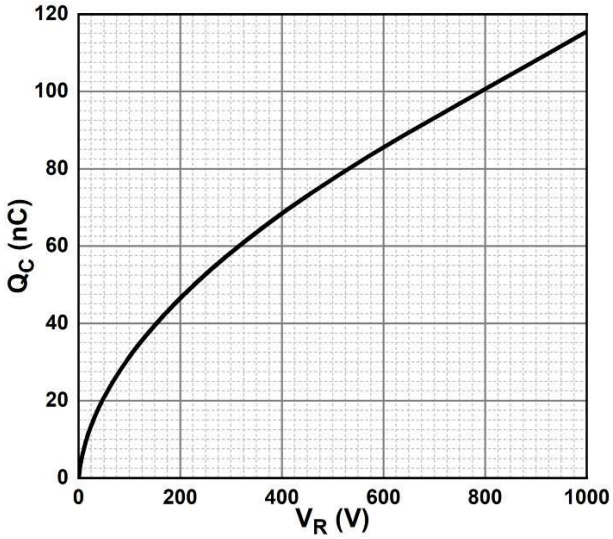


Figure 5. Capacitance Stored Energy

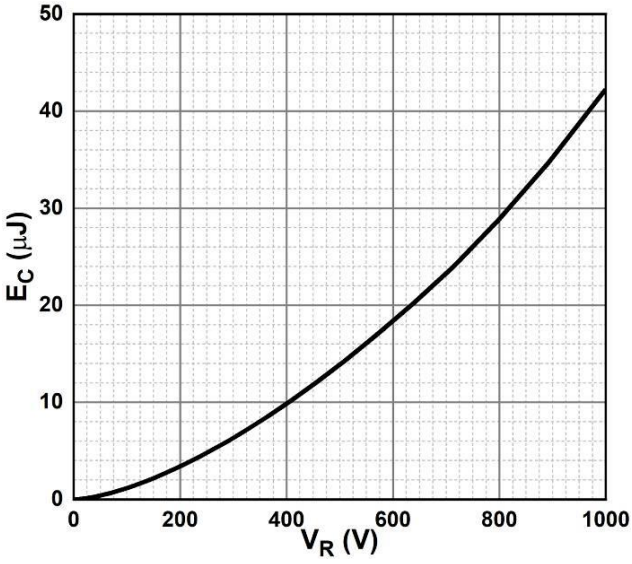
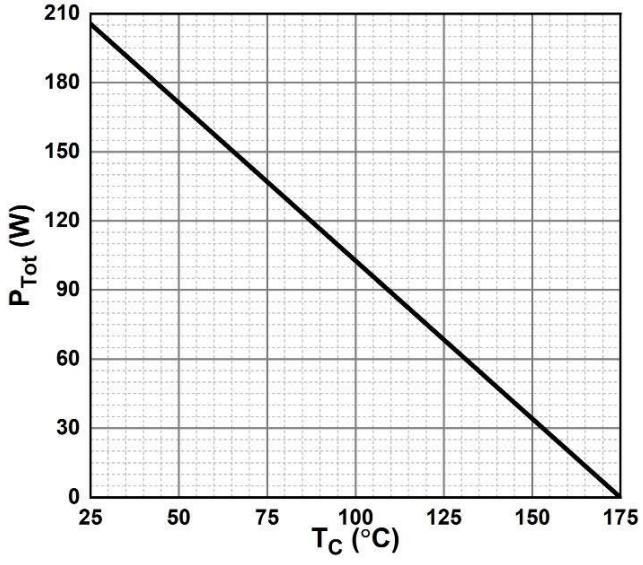


Figure 6. Power Derating



Curve Characteristics

Fig. 7 - Current Derating

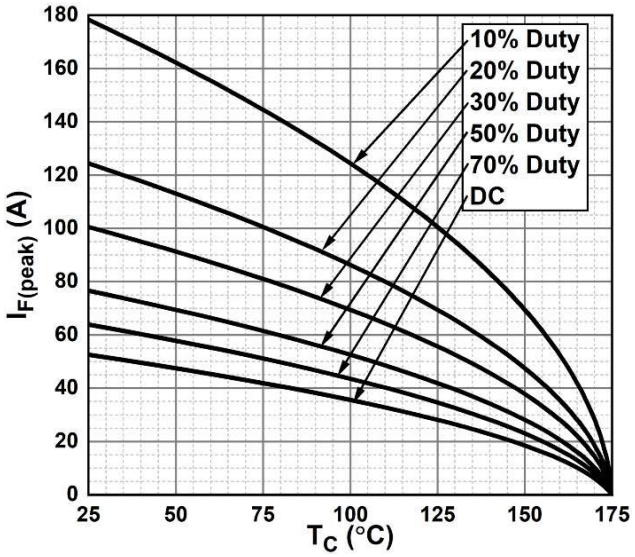
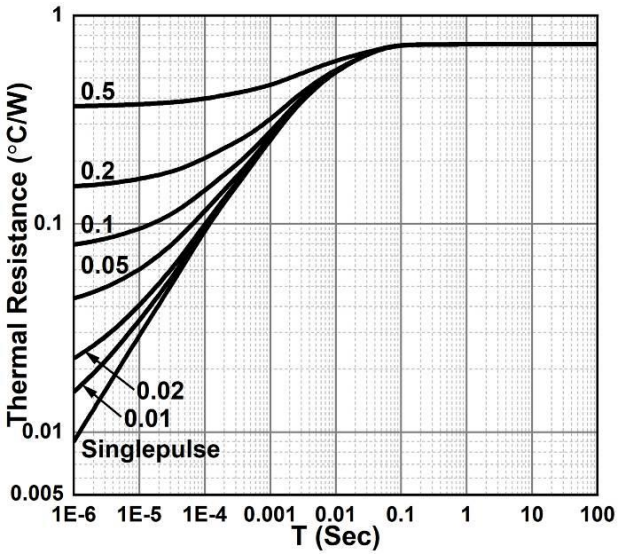


Fig. 8 - Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-BP	Bulk: 30pcs/Tube