



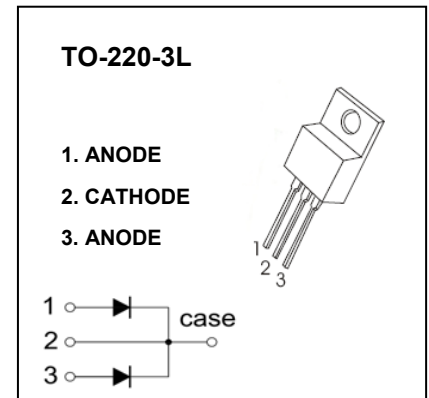
## TO-220-3L Plastic-Encapsulate Diodes

### MBR1070CT, 80CT, 90CT, 100CT

SCHOTTKY BARRIER RECTIFIER

#### FEATURES

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications



#### MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted )

Symbol	Parameter	Value				Unit
		MBR 1070CT	MBR 1080CT	MBR 1090CT	MBR 10100CT	
$V_{RRM}$	Peak repetitive reverse voltage	70	80	90	100	V
$V_{RWM}$	Working peak reverse voltage					
$V_R$	DC blocking voltage					
$V_{R(RMS)}$	RMS reverse voltage	49	56	63	70	V
$I_O$	Average rectified output current@ $T_c=100^\circ\text{C}$	10				A
$I_{FSM}$	Non-Repetitive peak forward surge current 8.3ms half sine wave	120				A
$P_D$	Power dissipation	2				W
$R_{\theta JA}$	Thermal resistance from junction to ambient	50				$^\circ\text{C/W}$
$T_j$	Junction temperature	125				$^\circ\text{C}$
$T_{stg}$	Storage temperature	-55~+150				$^\circ\text{C}$

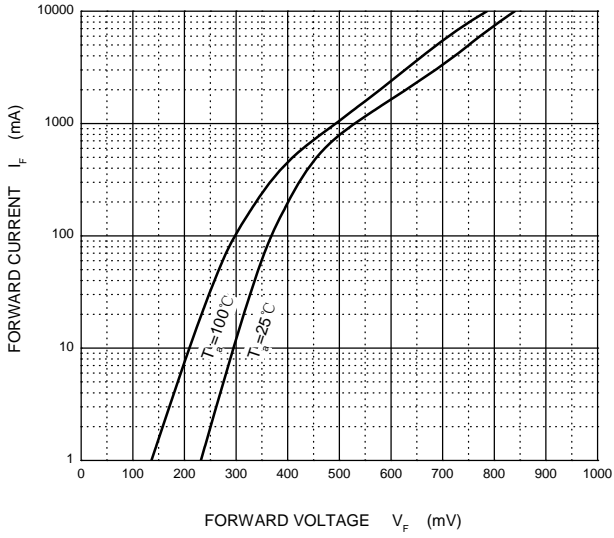
**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Device	Test conditions	Min	Typ	Max	Unit
Reverse voltage	V <sub>(BR)</sub>	MBR1070CT	I <sub>R</sub> =0.1mA	70			V
		MBR1080CT		80			
		MBR1090CT		90			
		MBR10100CT		100			
Reverse current	I <sub>R</sub>	MBR1070CT	V <sub>R</sub> =70V			0.1	mA
		MBR1080CT	V <sub>R</sub> =80V				
		MBR1090CT	V <sub>R</sub> =90V				
		MBR10100CT	V <sub>R</sub> =100V				
Forward voltage	V <sub>F(1)</sub>	MBR1070CT-10100CT	I <sub>F</sub> =5A			0.85	V
	V <sub>F(2)</sub> *	MBR1070CT-10100CT	I <sub>F</sub> =10A			0.95	
Typical total capacitance	C <sub>tot</sub>	MBR1070CT-10100CT	V <sub>R</sub> =4V,f=1MHz		150		pF

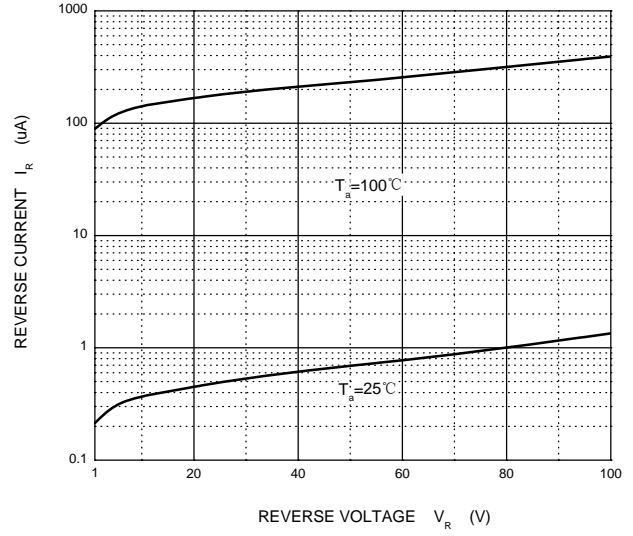
\*Pulse test

# Typical Characteristics

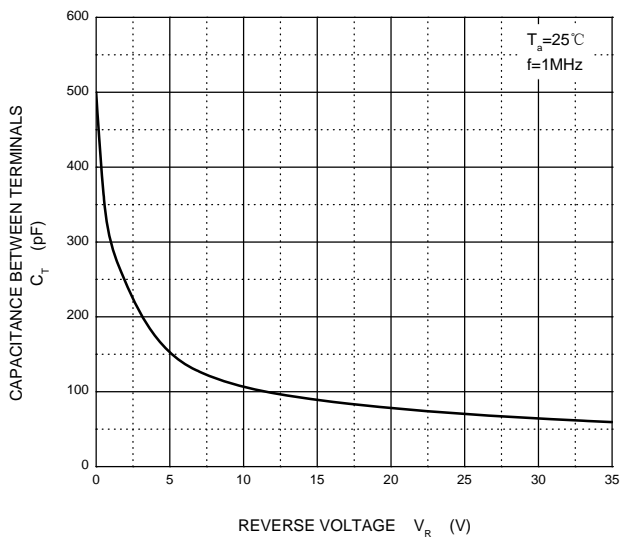
**Forward Characteristics**



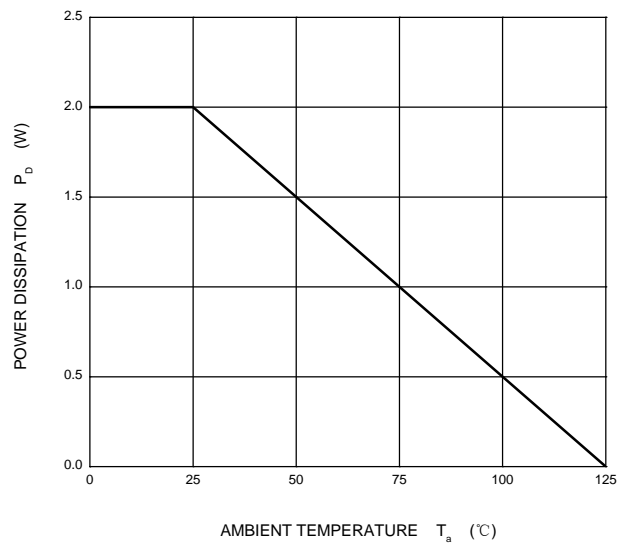
**Reverse Characteristics**



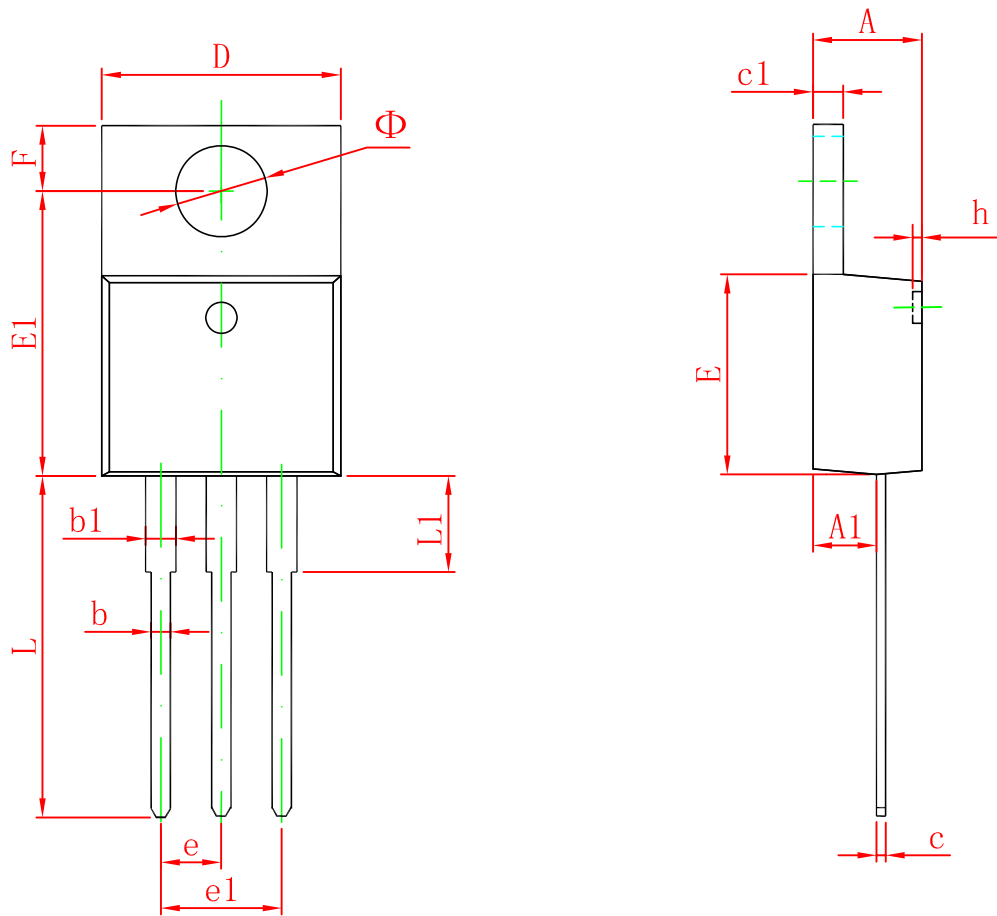
**Capacitance Characteristics**



**Power Derating Curve**



# TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
$\Phi$	3.735	3.935	0.147	0.155