

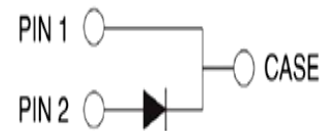
Product Features

- Silicon Carbide Unipolar Device
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on VF
- Reduction of Heat Sink Size
- Parallel Devices Without Thermal Runaway

Applications

- Switch Mode Power Supplies
- Uninterruptible Power Supplies
- Motor Control
- PV Inverters
- Wind Power Station

Part Number	Package	Marking
20A-650V B4	TO-220-2L	T.B.D



Absolute Maximum Ratings (Tc=25°C)

Parameter	Symbol	Value	Units
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Surge Peak Reverse Voltage	V_{RSM}	650	V
Continuous Forward Current	I_F	30 *	A
		20**	A
Non-Repetitive Peak Surge Forward Current@8.3mS half sine wave	I_{FSM}	160	A
Power Dissipation	P_D	214	W
Operating Junction Temperature and Storage Temperature Range	T_j , T_{STG}	-55~175	°C

Remake: * — Tc≤135°C , * — Tc≤154°C

Electrical Characteristics $T_J=25^{\circ}\text{C}$

Parameter	Symbol	Test Conditions	Min	Type	Max	Units
Reverse Breakdown Voltage	V_{BR}	$I_R=1\text{mA}$	650			V
Forward Voltage	V_F	$I_F=20\text{A}$,		1.3	1.5	V
		$I_F=20\text{A}$, $T_J=175^{\circ}\text{C}$		1.4	1.7	V
Reverse Leakage Current	I_R	$V_R=650\text{V}$		10	100	μA
		$V_R=650\text{V}$, $T_J=175^{\circ}\text{C}$		40	400	μA
Total Capacitance	C_T	$V_R=0.1\text{V}$, $f=1\text{MHz}$		1210		pF
		$V_R=200\text{V}$, $f=1\text{MHz}$		124		pF
		$V_R=400\text{V}$, $f=1\text{MHz}$		90		pF
Total Capacitive Charge	Q_C	$V_R=400\text{V}$, $I_F=20\text{A}$, $di/dt=200\text{A}/\mu\text{s}$		41		nC

Thermal Characteristics

Package	Parameter	Symbol	Type	Units
TO-220-2L	Thermal Resistance from Junction to Case	R_{thJC}	0.7	$^{\circ}\text{C}/\text{W}$
	Thermal Resistance from Junction to Ambient	R_{thJA}	80	$^{\circ}\text{C}/\text{W}$
	Soldering temperature	T_{sold}	260	$^{\circ}\text{C}$

Typical Performance

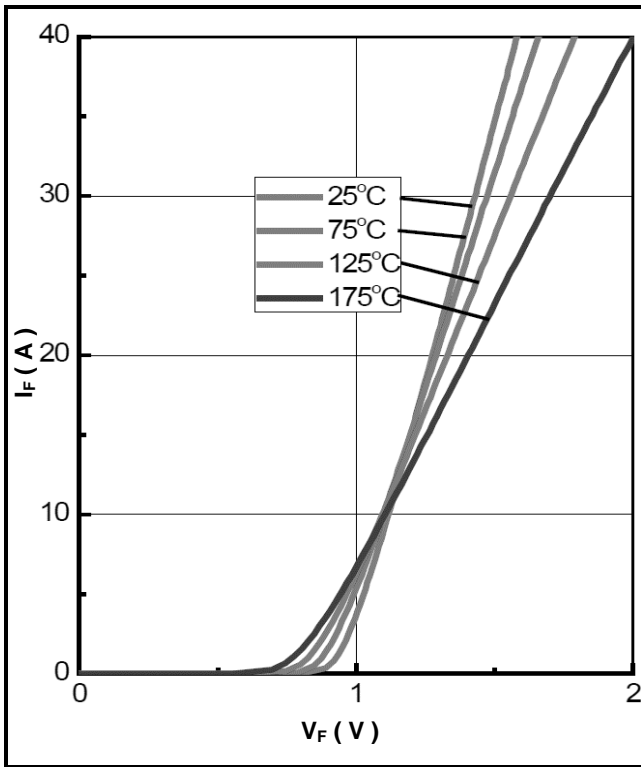


Figure 1. Forward Characteristics

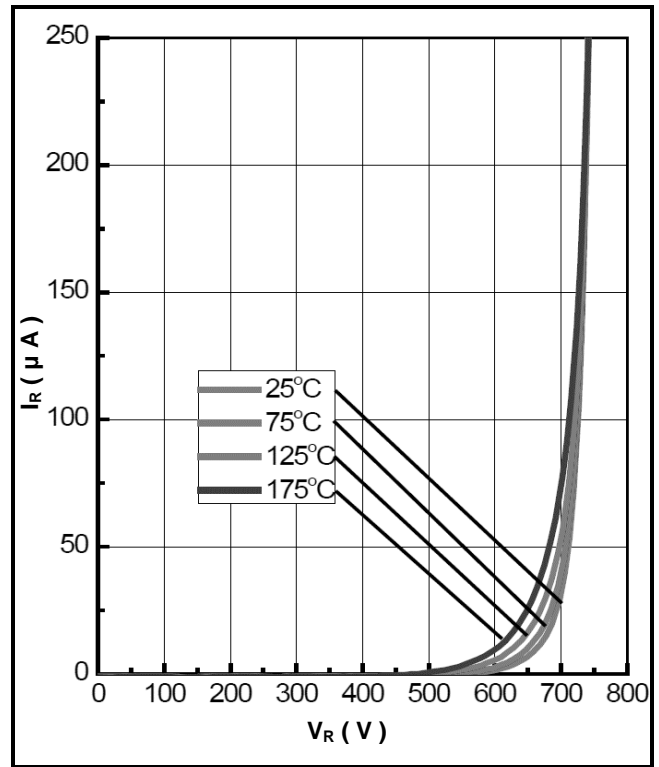


Figure 2. Reverse Characteristics

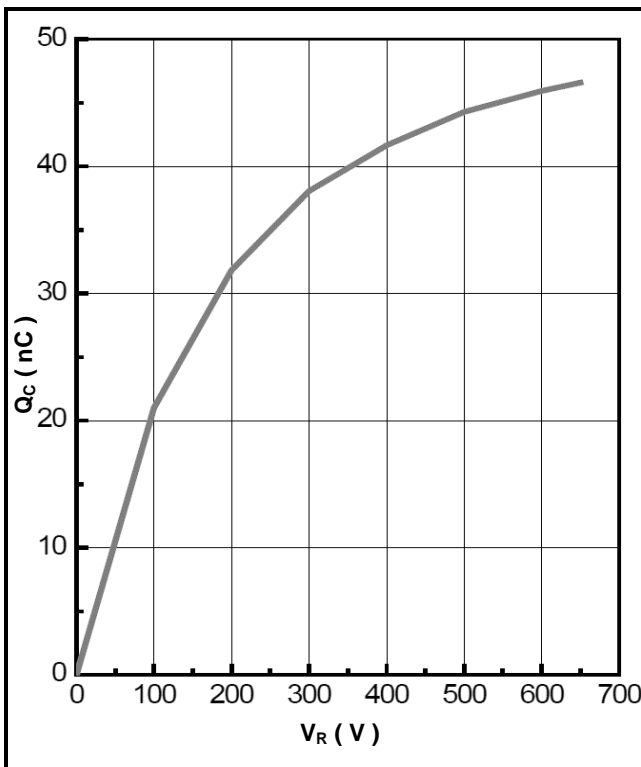


Figure 3. Total Capacitive Charge vs. Reverse Voltage

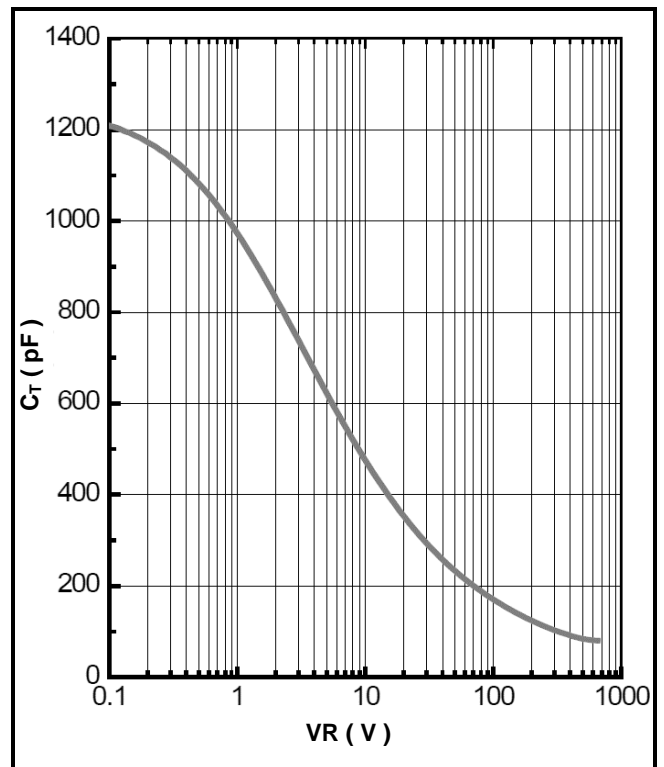


Figure 4. Total Capacitance vs. Reverse Voltage

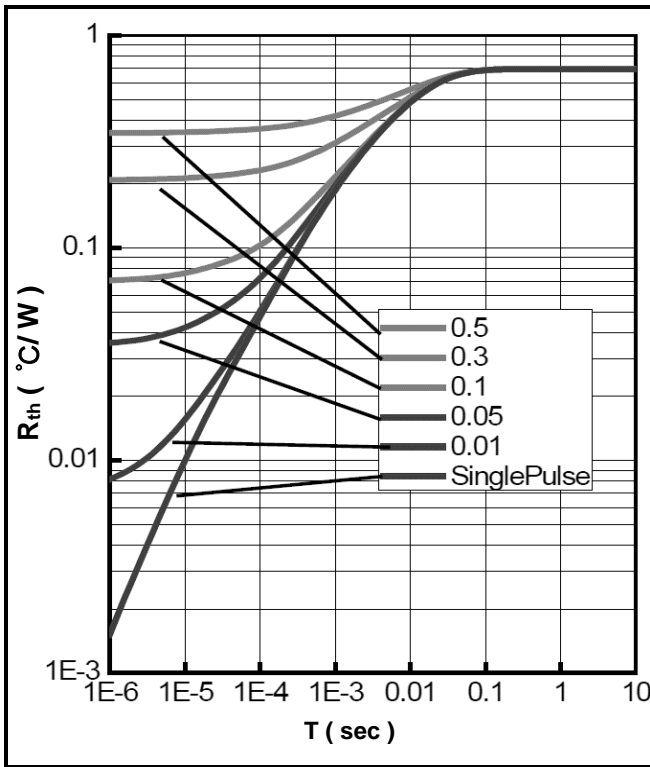


Figure 5. Transient Thermal Impedance

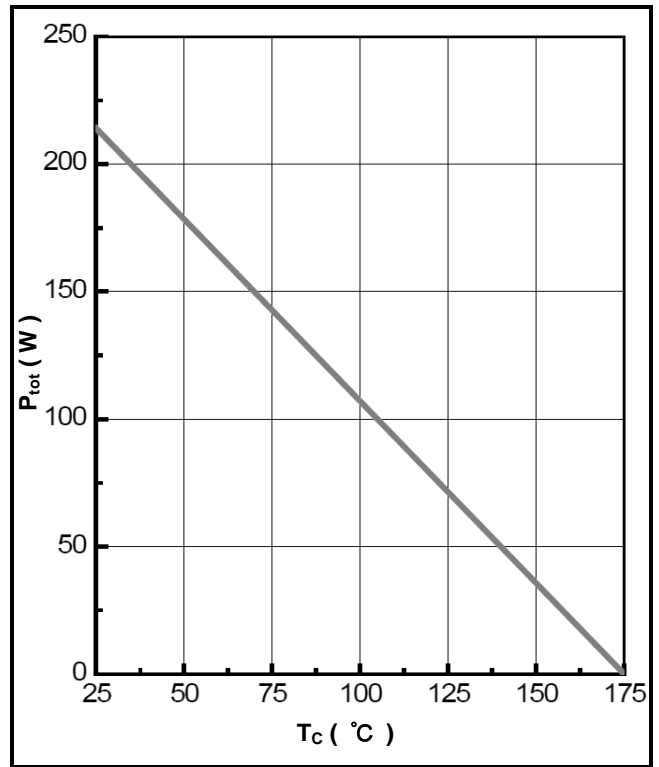


Figure 6. Power Derating

Package TO-220-2L

Symbol	Min.(mm)	Typ.(mm)	Max.(mm)
A	9.16	10.1	10.92
B	27	28.6	30
C	3.88	4.5	5
D	4.2	5.1	5.8
E	11.7	13.3	14.98
F	0.5	0.8	1.22

