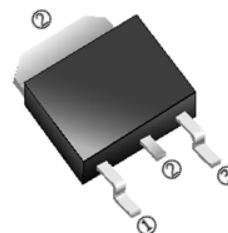


RoHS compliant product
A suffix of "-C" specifies halogen free

FEATURES

- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on V_F
- Temperature-independent Switching
- 175°C Operating Junction Temperature

TO-252



MECHANICAL DATA

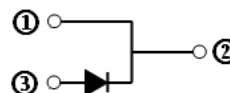
- Case: Molded Plastic
- Epoxy: UL94V-0 Rate Flame Retardant
- Lead: Lead Solderable per MIL-STD-202 Method 208 Guaranteed
- Polarity: As Marked
- Mounting Position: Any

APPLICATIONS

- Switch Mode Power Supplies
- Power Factor Correction
- Motor Drive, PV Inverter, Wind Power Station

ORDER INFORMATION

Part Number	Type
SIC10X65DS1-C	Lead (Pb)-free and Halogen-free



MAXIMUM RATINGS (Rating 25°C Case temperature unless otherwise)

Parameter	Symbol	Rating	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Surge Peak Reverse Voltage	V_{RSM}	650	V
DC Blocking Voltage	V_{DC}	650	V
Forward Current	I_F	$T_C \leq 25^\circ\text{C}$	29
		$T_C \leq 135^\circ\text{C}$	14.5
		$T_C \leq 153^\circ\text{C}$	10
Non-Repetitive Peak Forward Surge Current @8.3ms half sine-wave	I_{FSM}	85	A
Power Dissipation	$T_C = 25^\circ\text{C}$	83.3	W
Operating Junction & Storage Temperature	T_J, T_{STG}	-55~175	°C
Thermal Resistance Ratings			
Typical Thermal Resistance Junction-Ambient	$R_{\theta JA}$	80	°C/W
Typical Thermal Resistance Junction-Case	$R_{\theta JC}$	1.8	

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Typ.	Max.	Unit	Test Conditions
Forward Voltage	V_F	1.4	1.65	V	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$
		1.6	2.3		$I_F = 10\text{A}, T_J = 175^\circ\text{C}$
Reverse Current	I_R	1	20	μA	$V_R = 650\text{V}, T_J = 25^\circ\text{C}$
		5	100		$V_R = 650\text{V}, T_J = 175^\circ\text{C}$
Junction Capacitance	C_J	575	-	pF	$V_R = 0\text{V}, T_J = 25^\circ\text{C}, f = 1\text{MHz}$
		57	-		$V_R = 200\text{V}, T_J = 25^\circ\text{C}, f = 1\text{MHz}$
		46	-		$V_R = 400\text{V}, T_J = 25^\circ\text{C}, f = 1\text{MHz}$
Total Capacitive Charge	Q_C	26	-	nC	$V_R = 650\text{V}, I_F = 10\text{A}, T_J = 25^\circ\text{C}, dI/dt = 200\text{A}/\mu\text{s}$

CHARACTERISTIC CURVES

Figure 1. Forward Characteristics

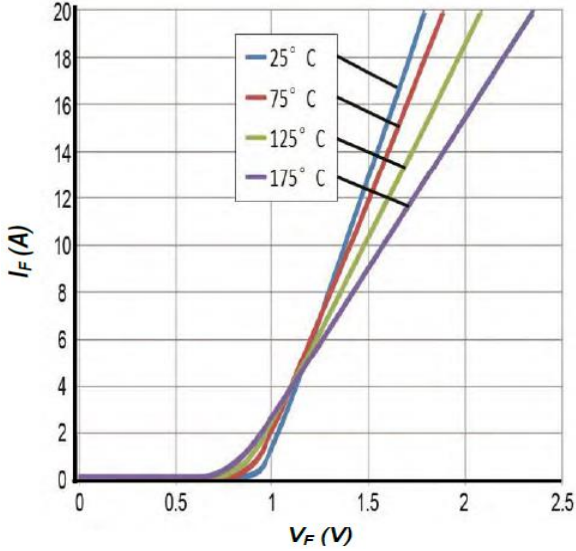


Figure 2. Reverse Characteristics

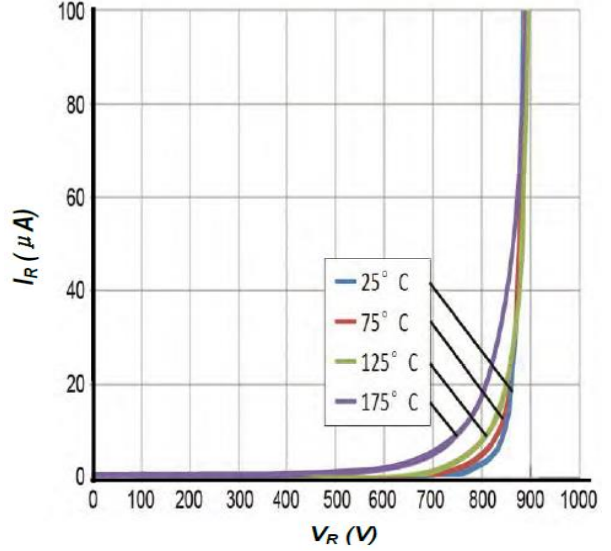


Figure 3. Power Derating

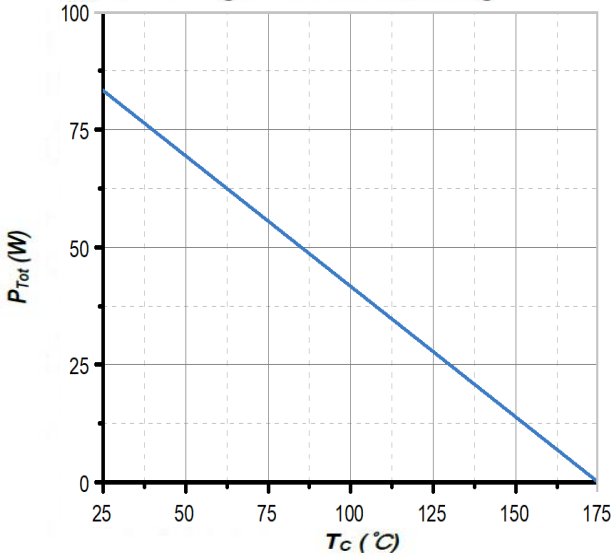


Figure 4. Total Capacitive Charge vs. Reverse Voltage

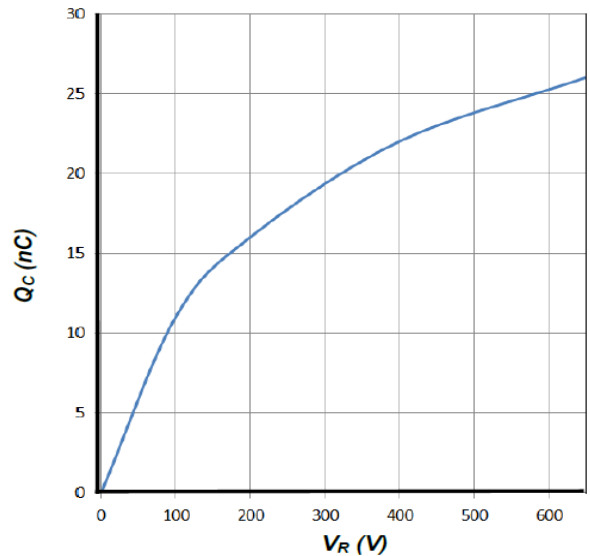
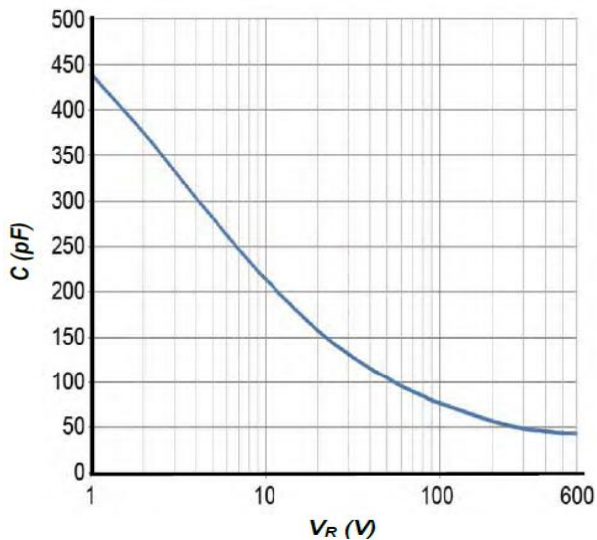
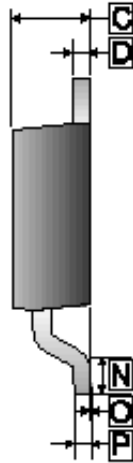
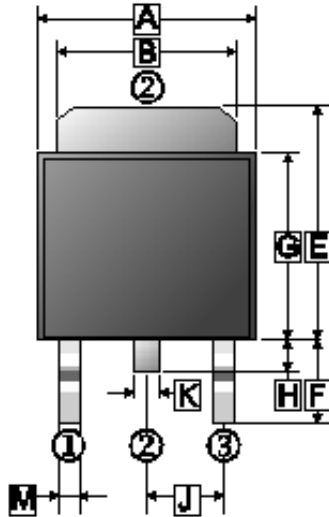


Figure 5. Total Capacitance vs. Reverse Voltage



PACKAGE OUTLINE DIMENSIONS

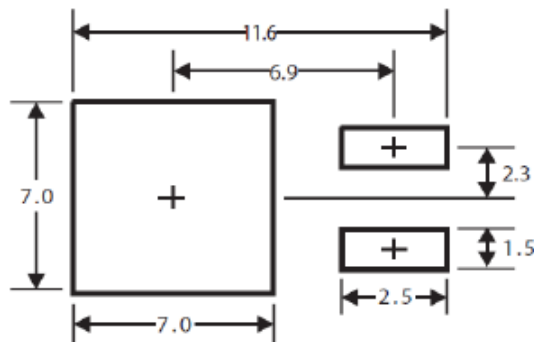
TO-252



REF.	Millimeter	
	Min.	Max.
A	6.30	6.90
B	4.95	5.53
C	2.10	2.50
D	0.40	0.90
E	6.00	7.70
F	2.90 REF.	
G	5.40	6.40
H	0.60	1.20
J	2.30 REF.	
K	0.89 REF.	
M	0.45	1.14
N	1.55 TYP.	
O	0	0.15
P	0.58 REF.	

MOUNTING PAD LAYOUT

TO-252



*Dimensions in millimeters