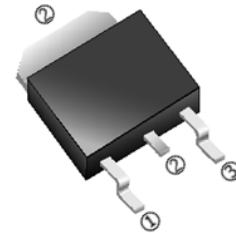


RoHS compliant product  
A suffix of "-C" specifies halogen free

## 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

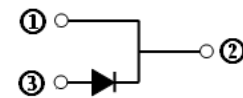
- Case: Molded Plastic
- Epoxy: UL94V-0 Rate Flame Retardant
- Lead: Lead Solderable per MIL-STD-202 Method 208 Guaranteed
- Polarity: As Marked
- Mounting Position: Any

## APPLICATIONS

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

## ORDER INFORMATION

Part Number	Type
SIC08X65DS1-C	Lead (Pb)-free and Halogen-free



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

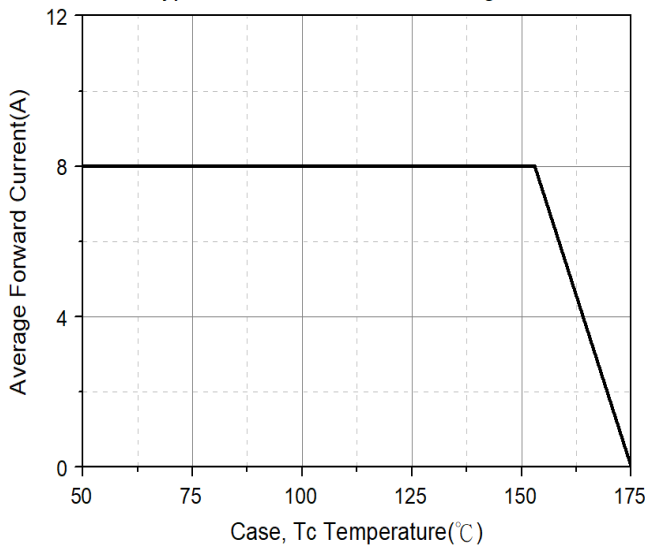
Parameter	Symbol	Rating	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	650	V
Surge Peak Reverse Voltage	$V_{RSM}$	650	V
DC Blocking Voltage	$V_{DC}$	650	V
Forward Current	$I_F$	$T_C \leq 25^\circ\text{C}$	24
		$T_C \leq 135^\circ\text{C}$	11
		$T_C \leq 153^\circ\text{C}$	8
Non-Repetitive Peak Forward Surge Current @8.3ms half sine-wave	$I_{FSM}$	70	A
Power Dissipation	$T_C = 25^\circ\text{C}$	$P_D$	83.3 W
Operating Junction & Storage Temperature Range	$T_J, T_{STG}$	-55~175	°C
<b>Thermal Resistance Ratings</b>			
Typical Thermal Resistance Junction-Ambient	$R_{\theta JA}$	80	°C/W
Typical Thermal Resistance Junction-Case	$R_{\theta JC}$	1.8	

### ELECTRICAL CHARACTERISTICS

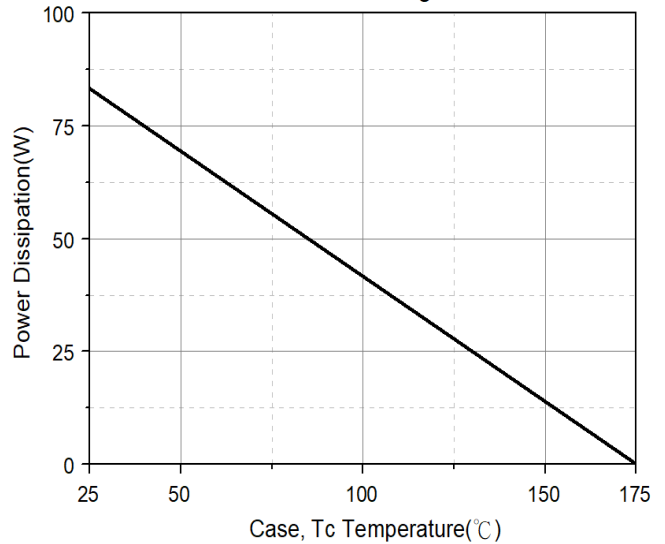
Parameter	Symbol	Typ.	Max.	Unit	Test Conditions
Forward Voltage	$V_F$	1.35	1.7	V	$I_F=8A, T_J=25^\circ C$
		1.4	2.4		$I_F=8A, T_J=175^\circ C$
Reverse Current	$I_R$	0.4	50	$\mu A$	$V_R=650V, T_J=25^\circ C$
		-	100		$V_R=650V, T_J=175^\circ C$
Junction Capacitance	$C_J$	470	-	pF	$V_R=0V, T_J=25^\circ C, f=1MHz$
Total Capacitive Charge	$Q_C$	17.5	-	nC	$V_R=200V, I_F=8A, di/dt=200A/\mu S, T_J=25^\circ C$

### CHARACTERISTIC CURVES

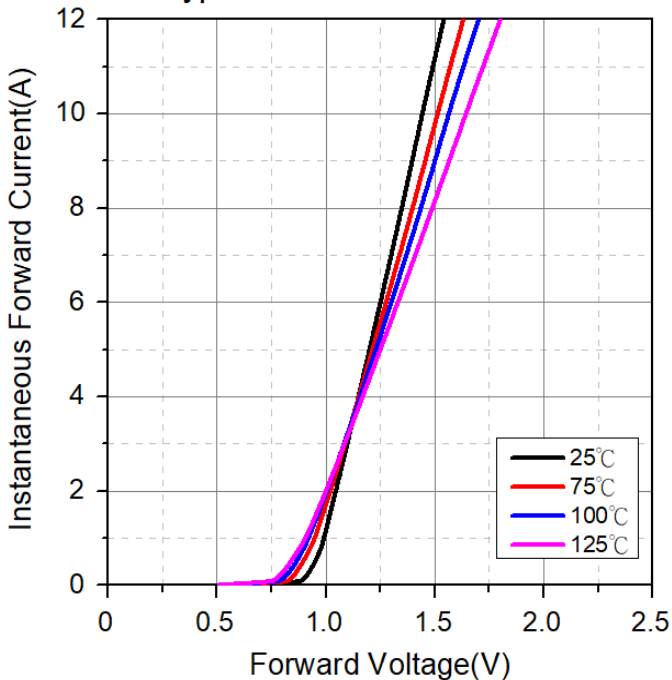
Typical Forward Current Derating Curve



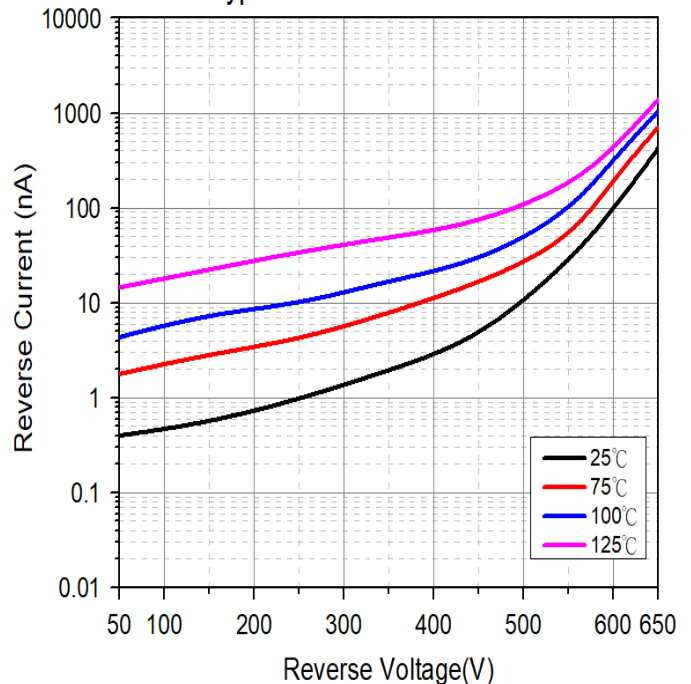
Power Derating



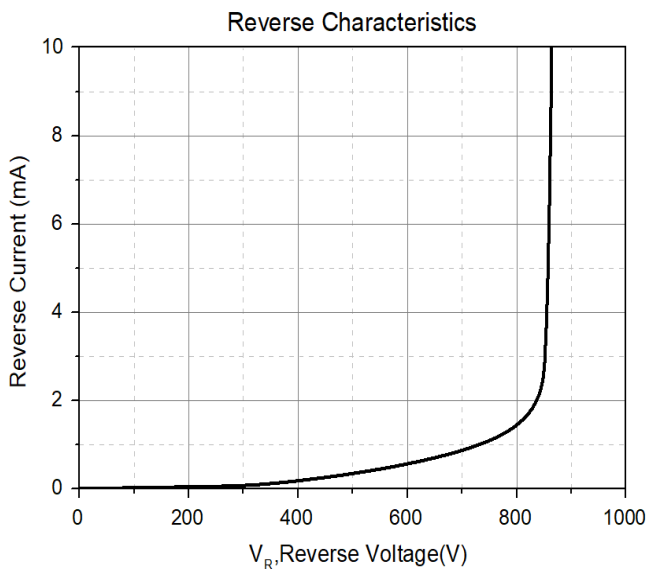
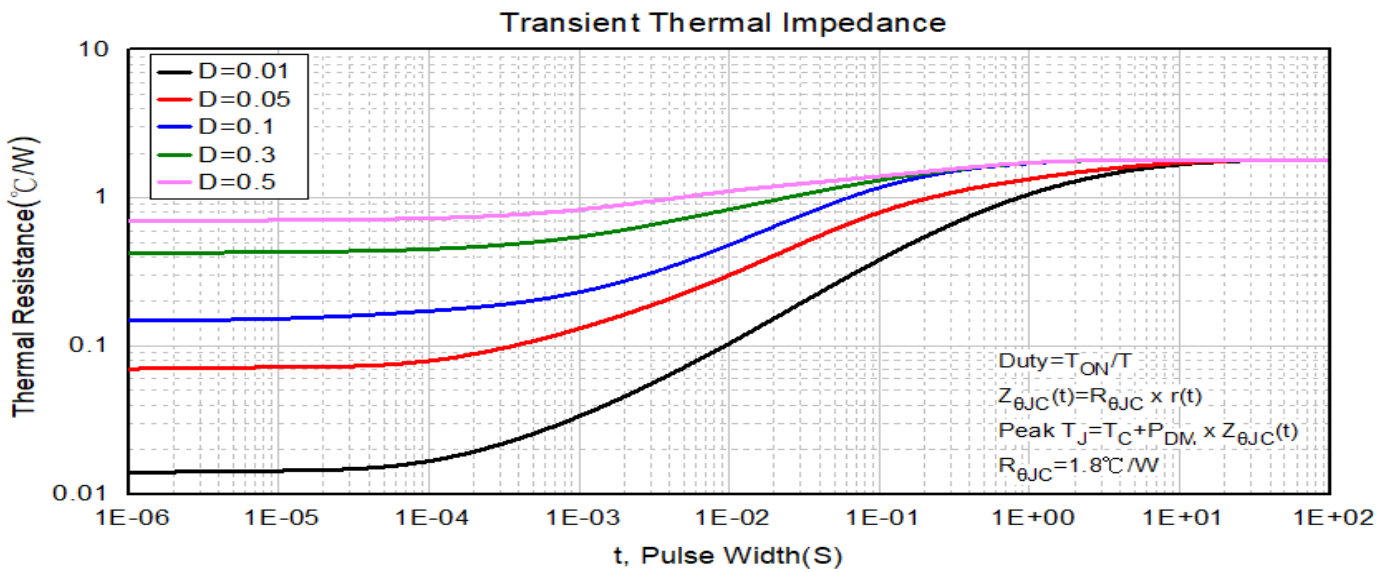
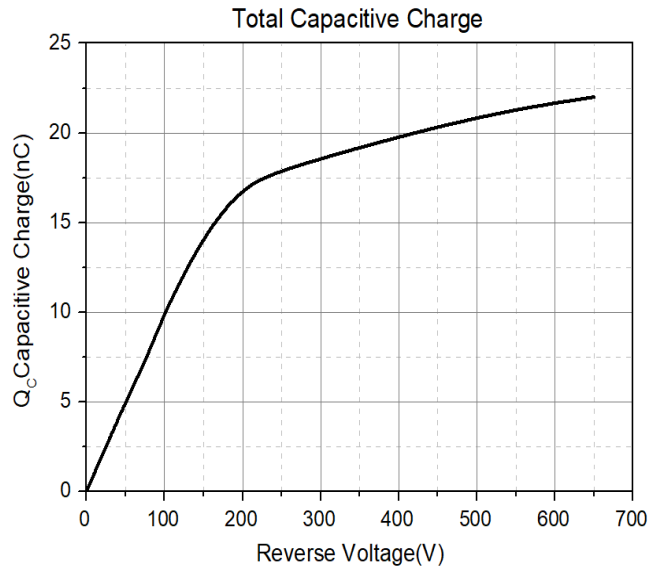
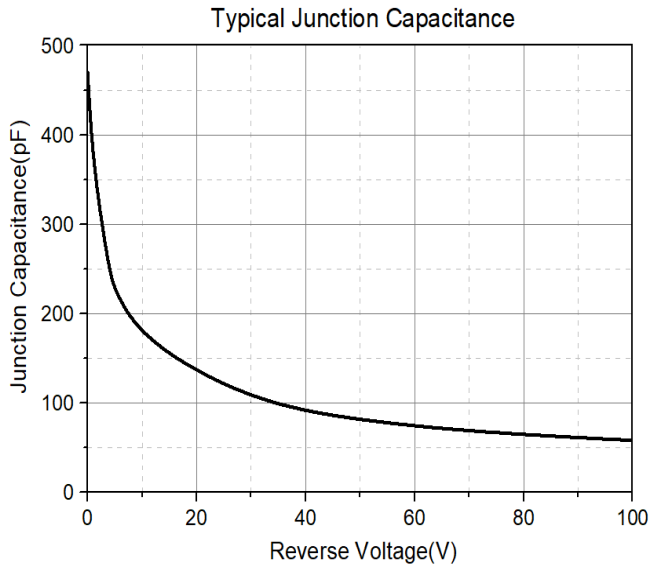
Typical Forward Characteristic



Typical Reverse Characteristic

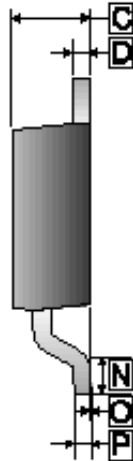
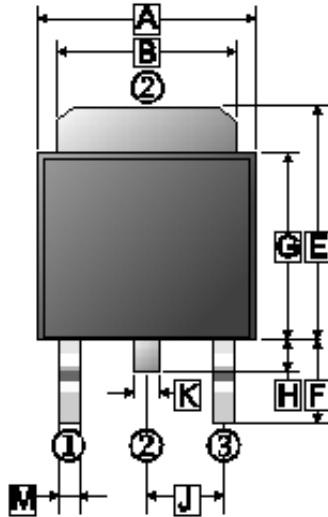


**CHARACTERISTIC CURVES**



**PACKAGE OUTLINE DIMENSIONS**

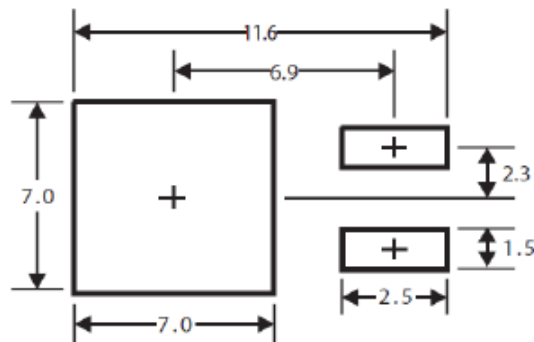
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REF.	Millimeter	
	Min.	Max.
A	6.30	6.90
B	4.95	5.53
C	2.10	2.50
D	0.40	0.90
E	6.00	7.70
F	2.90 REF.	
G	5.40	6.40
H	0.60	1.20
J	2.30 REF.	
K	0.89 REF.	
M	0.45	1.14
N	1.55 TYP.	
O	0	0.15
P	0.58 REF.	

**MOUNTING PAD LAYOUT**

TO-252



\*Dimensions in millimeters