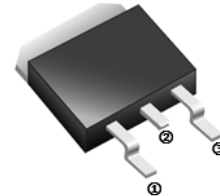


RoHS compliant product
A suffix of "-C" specifies halogen free

FEATURES

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

TO-263(D²-PACK)

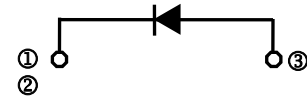


MECHANICAL DATA

- 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
SIC08X65DS-C	Lead (Pb)-free and Halogen-free

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

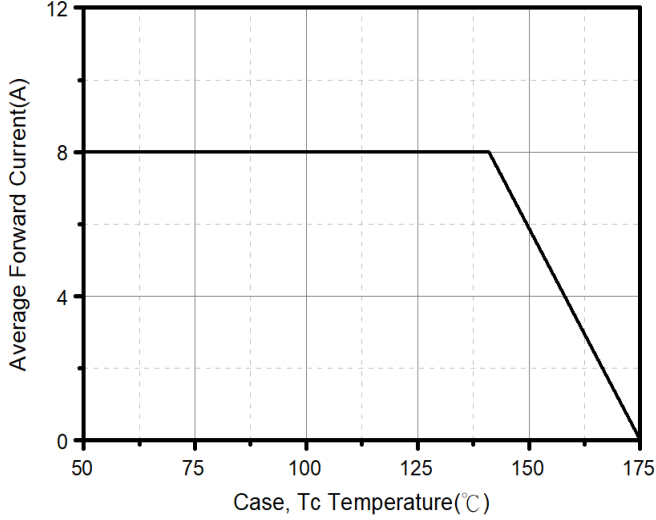
Parameter	Symbol	Rating	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Surge Peak Reverse Voltage	V_{RSM}	650	V
DC Blocking Voltage	V_{DC}	650	V
Forward Current	$T_C \leq 25^\circ\text{C}$	27	A
	$T_C \leq 125^\circ\text{C}$	11	
	$T_C \leq 141^\circ\text{C}$	8	
Peak Forward Surge Current @8.3ms half sine-wave	I_{FSM}	70	A
Power Dissipation	$T_C = 25^\circ\text{C}$	91	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	$R_{\theta JC}$	1.65	

ELECTRICAL CHARACTERISTICS

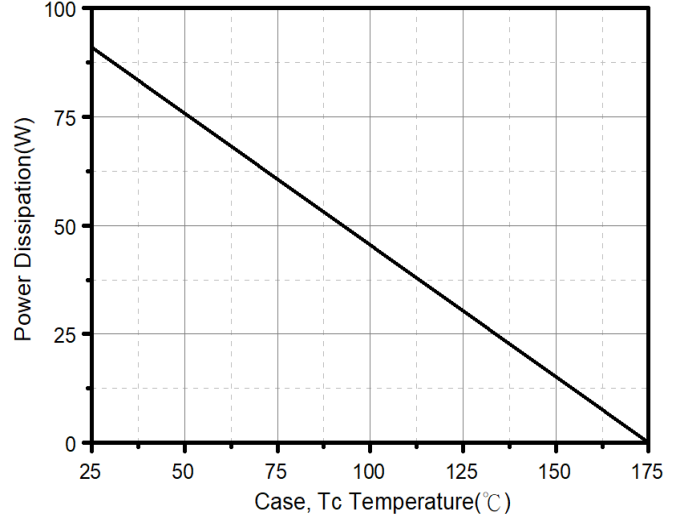
Parameter	Symbol	Typ.	Max.	Unit	Test Conditions
Forward Voltage	V_F	1.4	1.65	V	$I_F = 8\text{A}, T_J = 25^\circ\text{C}$
		1.9	2.4		$I_F = 8\text{A}, T_J = 175^\circ\text{C}$
Reverse Current	I_R	0.2	30	μA	$V_R = 650\text{V}, T_J = 25^\circ\text{C}$
		3	100		$V_R = 650\text{V}, T_J = 175^\circ\text{C}$
Junction Capacitance	C_J	620	-	pF	$V_R = 0\text{V}, T_J = 25^\circ\text{C}, f = 1\text{MHz}$
Total Capacitive Charge	Q_C	40.55	-	nC	$V_R = 400\text{V}, I_F = 8\text{A}, T_J = 25^\circ\text{C}, di/dt = 200\text{A/us}$

CHARACTERISTIC CURVES

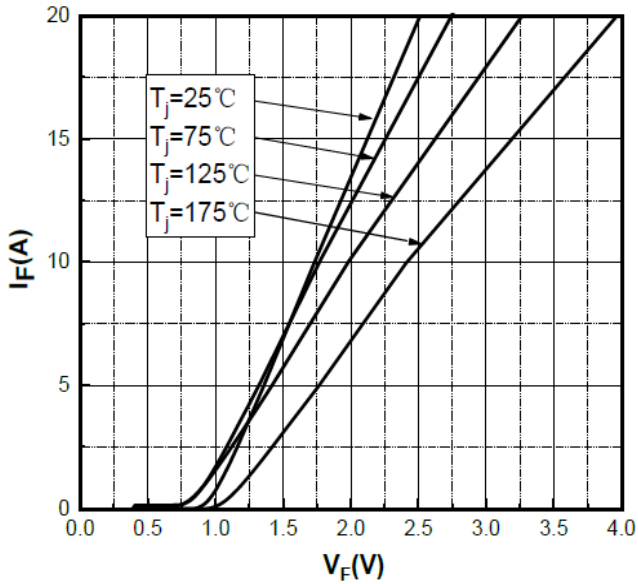
Typical Forward Current Derating Curve



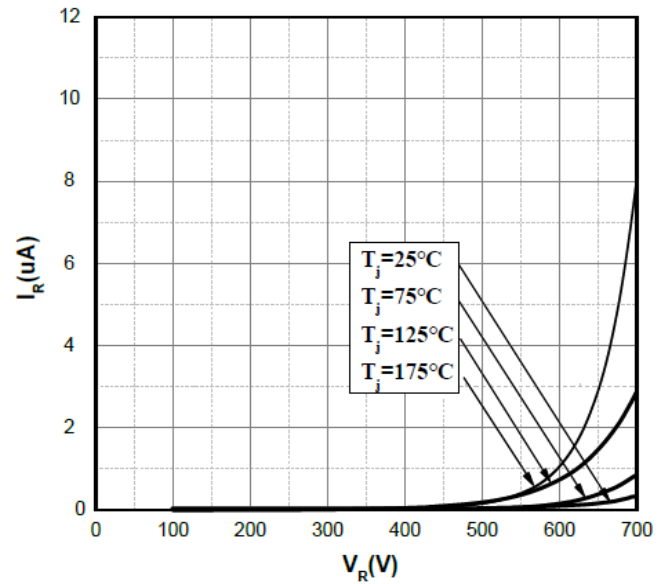
Power Derating



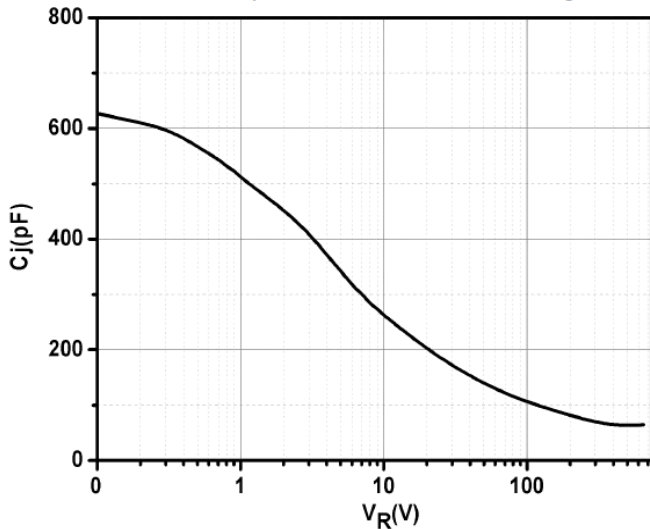
Forward Characteristics



Reverse Characteristics

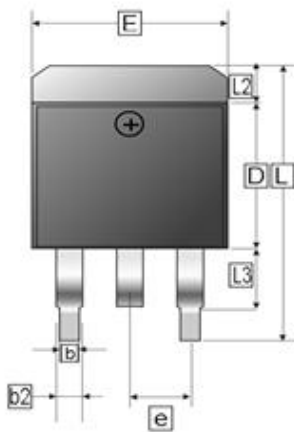


Total Capacitance vs. Reverse Voltage



PACKAGE OUTLINE DIMENSIONS

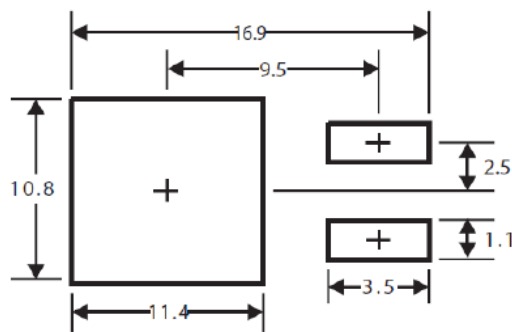
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REF.	Millimeter	
	Min.	Max.
A	4.00	4.87
b	0.508	1.01
L4	0	0.30
C	0.30	0.74
L3	1.50 REF.	
L1	2.50 REF.	
E	9.60	10.67
c2	1.07	1.65
b2	1.34 REF.	
D	8.00	9.652
e	2.54 REF.	
L	14.6	16.1
L2	1.27 REF.	

MOUNTING PAD LAYOUT

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*Dimensions in millimeters