

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

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

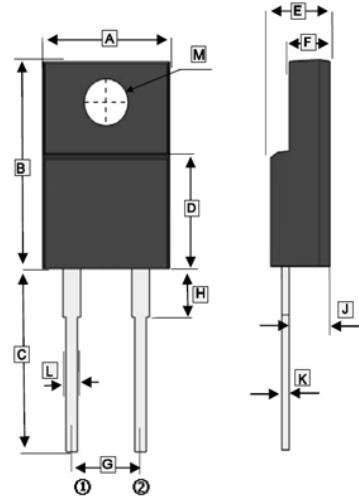
APPLICATIONS

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

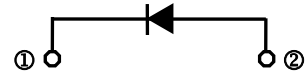
ORDER INFORMATION

Part Number	Type
SIC0665AF-C	Lead (Pb)-free and Halogen-free

ITO-220A



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	9.90	10.30	G	4.70	5.30
B	15.80	16.20	H	1.80	3.90
C	12.90	13.50	J	2.60 TYP.	
D	9.10	9.50	K	0.42	0.58
E	4.55	4.95	L	0.60	1.00
F	2.40	2.80	M	φ 2.98	φ 3.40



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

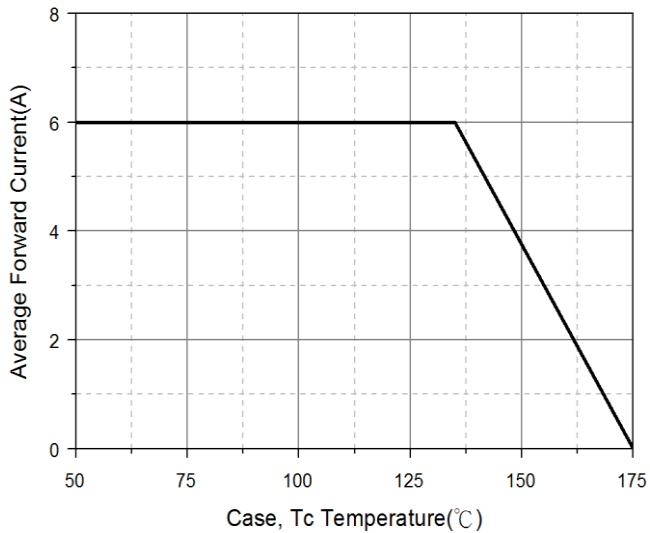
Parameter	Symbol	Rating	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Surge Peak Reverse Voltage	V_{RSM}	650	V
DC Blocking Voltage	V_{DC}	650	V
Forward Current	I_F	$T_C \leq 25^\circ\text{C}$	13
		$T_C \leq 135^\circ\text{C}$	6
Non-Repetitive Peak Forward Surge Current @ $t_p=10\text{ms}$	I_{FSM}	48	A
Power Dissipation	P_D	41	W
Operating Junction and 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	$R_{\theta JC}$	3.6	

ELECTRICAL CHARACTERISTICS

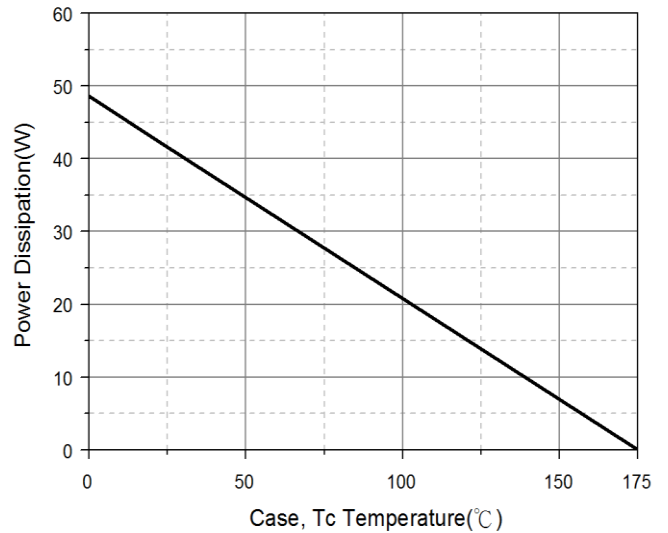
Parameter	Symbol	Typ.	Max.	Unit	Test Conditions
Forward Voltage	V_F	1.4	1.65	V	$I_F=6A, T_J=25^\circ C$
		1.7	2.3		$I_F=6A, T_J=175^\circ C$
Reverse Current	I_R	3.8	30	μA	$V_R=650V, T_J=25^\circ C$
		255	-		$V_R=650V, T_J=175^\circ C$
Junction Capacitance	C_J	300	-	pF	$V_R=0V, T_J=25^\circ C, f=1MHz$
		34	-		$V_R=200V, T_J=25^\circ C, f=1MHz$
		30	-		$V_R=400V, T_J=25^\circ C, f=1MHz$
Total Capacitive Charge	Q_C	17	-	nC	$V_R=400V, I_F=6A, T_J=25^\circ C, di/dt=200A/\mu s$

CHARACTERISTIC CURVES

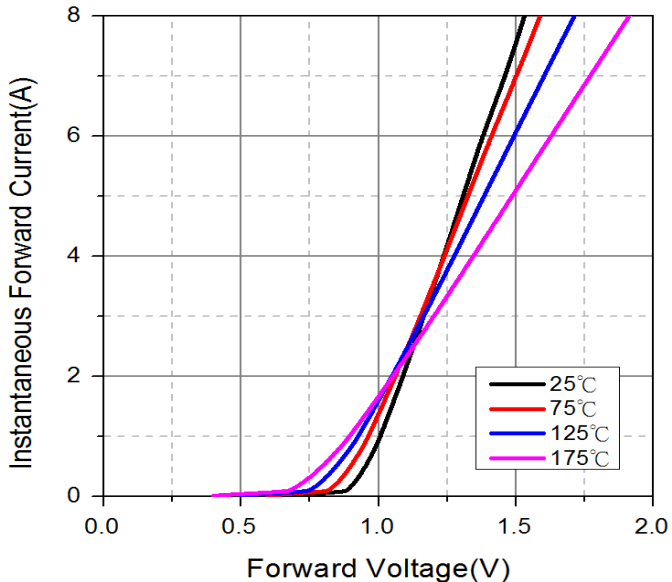
Typical Forward Current Derating Curve



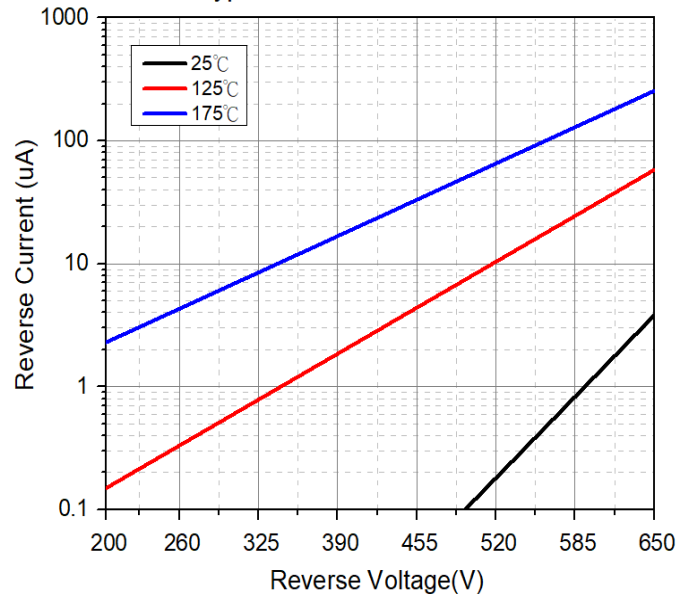
Power Derating



Typical Forward Characteristic

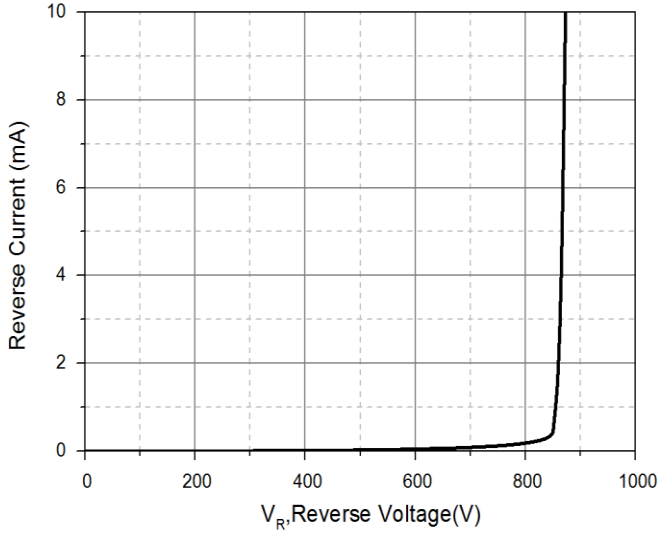


Typical Reverse Characteristic

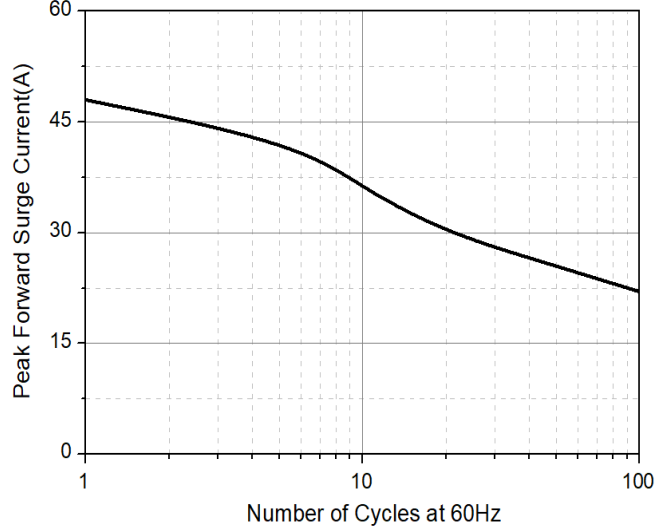


CHARACTERISTIC CURVES

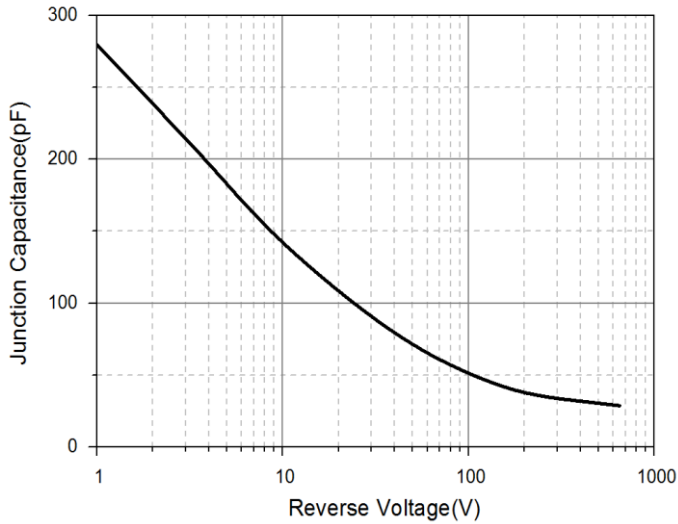
Reverse Characteristics



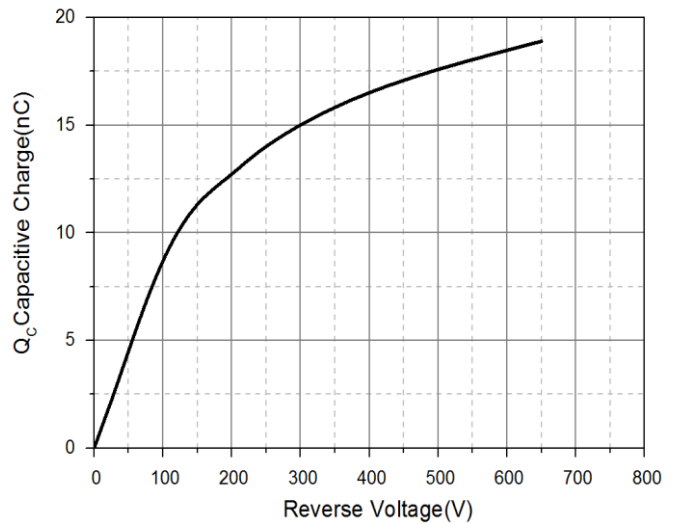
Non-Repetitive Forward Surge Current



Typical Junction Capacitance



Total Capacitive Charge



Transient Thermal Impedance

