SICF08C60

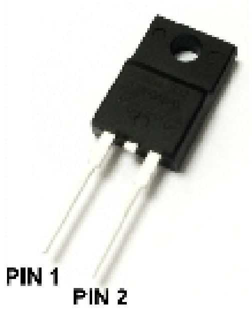
Chip Integration Technology Corporation

8A SiC Schottky Diode

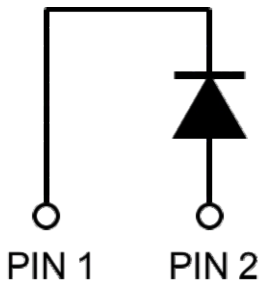
Main Product Characteristics

$I_{F(AV)}$	8A, T_c=99°C
V_{RRM}	600V
T_J	175°C
$V_{F(Typ)}$25°C	1.45V

■ Outline



Package ITO-220AC



Inner Circuit

■ Features

- Low Conduction and Switching Loss
- Positive Temperature Coefficient on V_F
- Temperature Independent Switching Behavior
- Fast Reverse Recovery
- High Surge Current Capability
- Pb-free lead plating

■ Benefits

- Higher System Efficiency
- Parallel Device Convenience
- High Temperature Application
- High Frequency Operation
- Hard Switching & High Reliability
- Environmental Protection

■ Applications

- SMPS
- PFC
- Solar/Wind Renewable Energy
- Power Inverters
- Motor Drives

■ Maximum ratings and electrical characteristics

Parameter	Conditions	Symbol	SIC08C60	UNIT
Peak Repetitive Reverse Voltage	T_J=25°C	V_{RRM}	600	V
Peak Reverse Surge Voltage	T_J=25°C	V_{RSM}	600	
DC Blocking Voltage	T_J=25°C	V_R	600	
Continuous Forward Current	T_c=25°C	I_F	10.5	A
	T_c=80°C		8	
	T_c=135°C		4.5	
Non-Repetitive Peak Forward surge current	T_c=25°C,T_p=10ms,Half Sine-Wave	I_{FSM}	64	A
	T_c=125°C,T_p=10ms,Half Sine-Wave		55	
	T_c=25°C,T_p=10us,Pulse		358	
Repetitive Peak Forward surge current	T_c=25°C,T_p=10ms,Half Sine-Wave,D=0.1	I_{FRM}	50	A
	T_c=125°C,T_p=10ms,Half Sine-Wave,D=0.1		41	
Power Dissipation	T_c=25°C	P_D	23.5	W
	T_c=125°C		7.5	
Operation Junction and Storage Temperature		T_J	175	°C
		T_{stg}	-55 to 175	
Thermal Resistance Junction to Case		$R_{\theta JC}$	6.3	°C/W

Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	UNIT
DC Blocking Voltage	I_R=100uA,T_J=25°C	V_{DC}		>650		V
Forward Voltage	I_F=8A,T_J=25°C	V_F		1.45	1.8	V
	I_F=8A,T_J=175°C			1.8	2.2	
Reverse Current	V_R=600V,T_J=25°C	I_R		<1	40	uA
	V_R=600V,T_J=175°C			12	160	
Total Capacitive Charge	I_F=8A,dI/dt=300A/us, V_R=400V,T_J=25°C	Q_C		16		nC
Total Capacitive	V_R=1V,T_J=25°C,f=1MHz	C		301		pF
	V_R=200V,T_J=25°C,f=1MHz			48		
	V_R=400V,T_J=25°C,f=1MHz			48		

■ Rating and characteristic curves

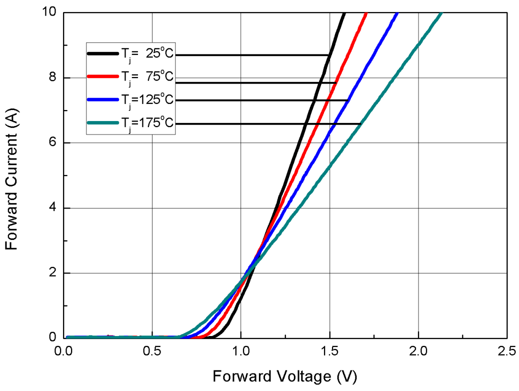


Fig. 1 Forward Characteristics

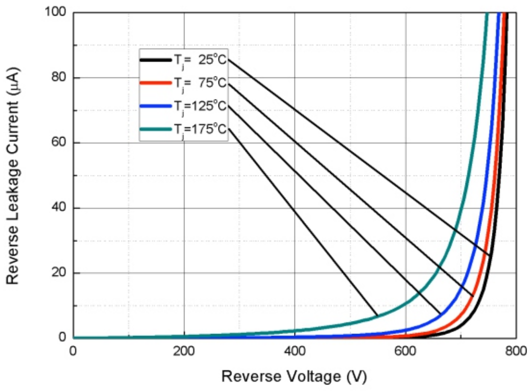


Fig. 2 Reverse Characteristics

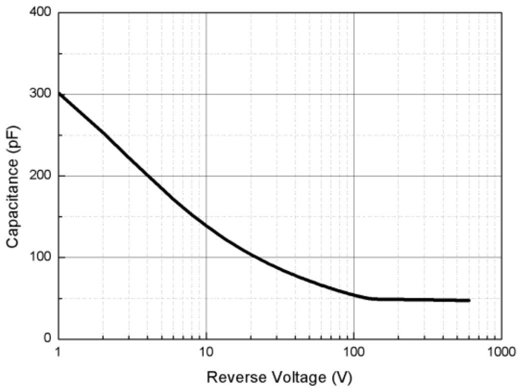


Fig. 3 Capacitance vs. Reverse Voltage

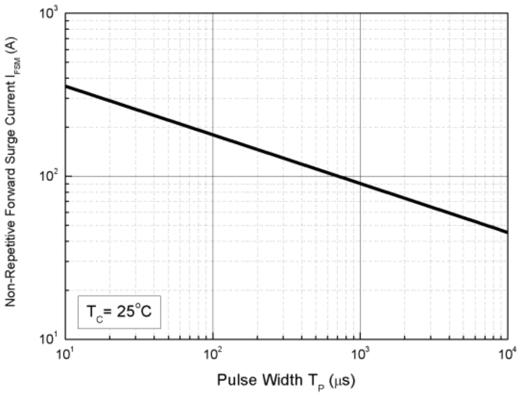


Fig. 4 Non-Repetitive Peak Forward Surge Current (Pulse Mode)

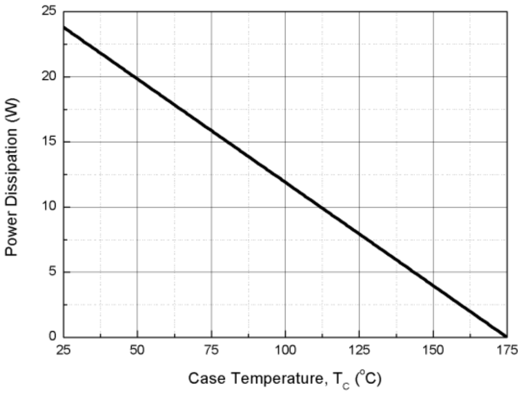


Fig. 5 Power Derating

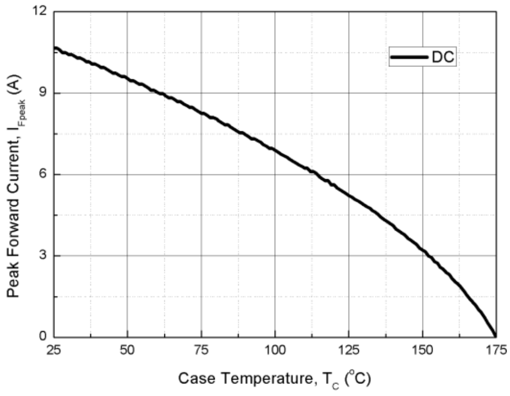
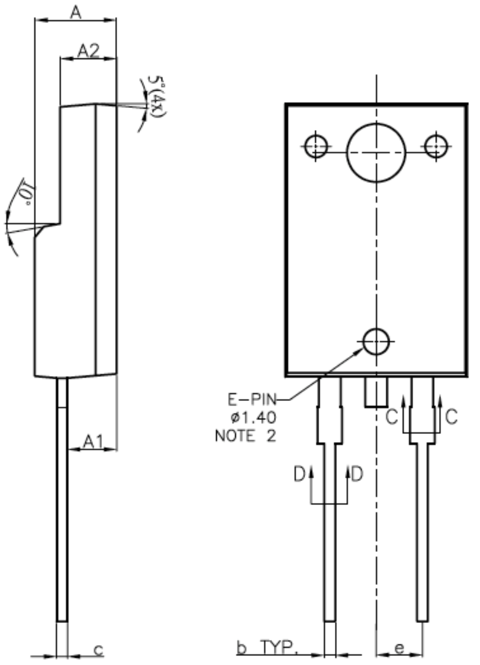


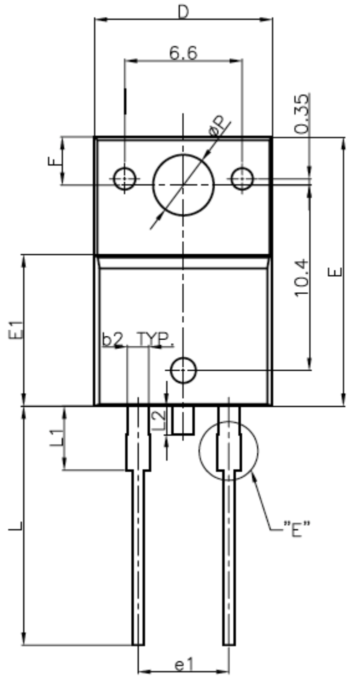
Fig. 6 Current Derating

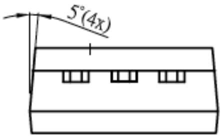
■ Outline

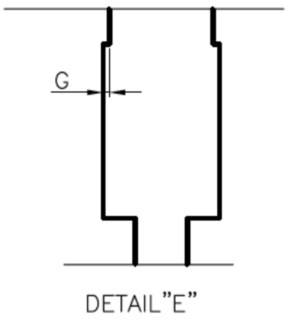


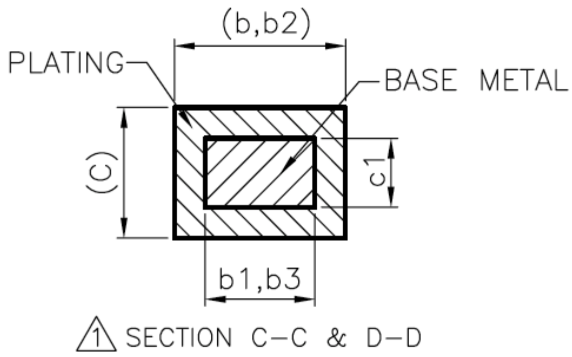
SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	4.20	4.50	4.80	0.165	0.177	0.189
A1	2.50	---	2.90	0.098	---	0.114
A2	2.90	3.10	3.30	0.114	0.122	0.130
b	0.30	---	0.93	0.012	---	0.037
b1	0.30	0.60	0.90	0.012	0.024	0.035
b2	1.00	---	1.43	0.039	---	0.056
b3	1.00	1.20	1.40	0.039	0.047	0.055
c	0.50	---	0.73	0.020	---	0.029
c1	0.50	0.60	0.70	0.020	0.024	0.028
D	9.90	10.00	10.10	0.390	0.394	0.398
E	14.80	15.10	15.40	0.583	0.594	0.606
E1	8.40	8.50	8.60	0.331	0.335	0.339
e	---	2.55 BSC	---	---	0.100 BSC	---
e1	---	5.10 BSC	---	---	0.200 BSC	---
F	2.55	2.70	2.85	0.100	0.106	0.112
G	0.00	---	0.127	0.000	---	0.005
L	13.00	13.40	13.80	0.512	0.528	0.543
L1	3.45	3.60	3.75	0.136	0.142	0.148
L2	---	---	1.60	---	---	0.063
øP	2.90	3.20	3.50	0.114	0.126	0.138

NOTES:
1.All dimension are in mm[inch].
2.Tolerance : ±0.004inch.

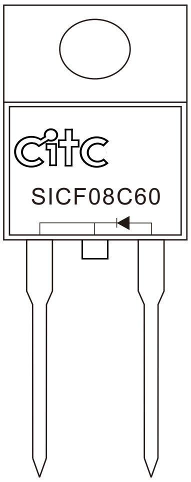








- Marking information



SICF08C60 : Product type marking code

citc : CITC Logo

- Ordering/Packing infirmation

	Part number	Case	Q'TY/Tube (PCS)	Q'TY Box(PCS)	Q'TY/Carton(PCS)
Halogen Free	SICF08C60	ITO-220AC	50	4,000	8,000

Notes : 1. For packaging details, please reference our website at http://www.citcorp.com.tw/tchinese/products/index.php