

■ 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

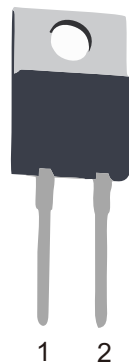
- Higher System Efficiency
- Parallel Device Convenience
- High Temperature Application
- High Frequency Operation
- Hard Switching & High Reliability
- Environmental Protection

■ Applications

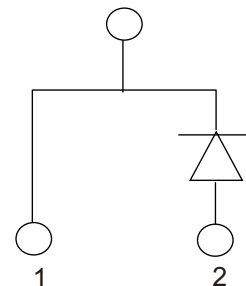
- SMPS
- PFC
- Solar/Wind Renewable Energy
- Power Inverters
- Motor Drives

■ Maximum ratings and electrical characteristics

■ Outline



Package TO-220-2L



Inner Circuit

Parameter	Conditions	Symbol	SIC12C60			UNIT
Marking code			SIC12C60			
Peak Repetitive Reverse Voltage	T _j =25°C	V _{RRM}	600			V
Peak Reverse Surge Voltage	T _j =25°C	V _{RSM}	600			V
DC Blocking Voltage	T _j =25°C	V _R	600			V
Continuous Forward Current	T _c =25°C	I _F	26			A
	T _c =135°C		12			
	T _c =145°C		10			
Non-Repetitive Peak Forward surge current	T _c =25°C, T _p =10ms, Half Sine-Wave	I _{FSM}	67			A
	T _c =125°C, T _p =10ms, Half Sine-Wave		61			
	T _c =25°C, T _p =10us, Pulse		451			
Repetitive Peak Forward surge current	T _c =25°C, T _p =10ms, Half Sine-Wave, D=0.1	I _{FRM}	51			A
	T _c =125°C, T _p =10ms, Half Sine-Wave, D=0.1		46			
Power Dissipation	T _c =25°C	P _D	88			W
	T _c =125°C		29			
Operation Junction and Storage Temperature		T _J	175			°C
		T _{stg}	-55 to 175			
Thermal Resistance Junction to Case		R _{θJC}	1.7			°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 =10A, T _J =25°C	V _F		1.5	1.8	V
	I _F =10A, T _J =175°C			1.9	2.2	
Reverse Current	V _R =600V, T _J =25°C	I _R		<1	50	uA
	V _R =600V, T _J =125°C			15	160	
Total Capacitive Charge	I _F =10A, dI/dt=300A/us, V _R =400V, T _J =25°C	Q _C		19		nC
Total Capacitive	V _R =1V, T _J =25°C, f=1MHz	C		398		pF
	V _R =200V, T _J =25°C, f=1MHz			53		
	V _R =400V, T _J =25°C, f=1MHz			52		

■ Rating and characteristic curves

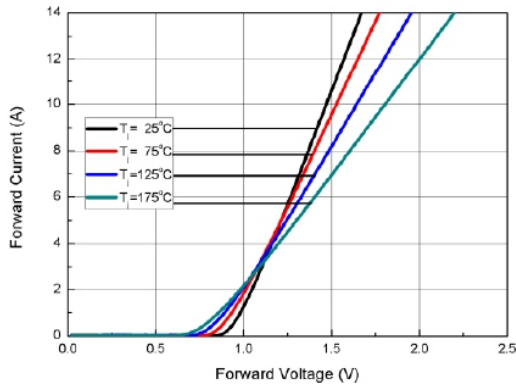


Fig. 1 Forward Characteristics

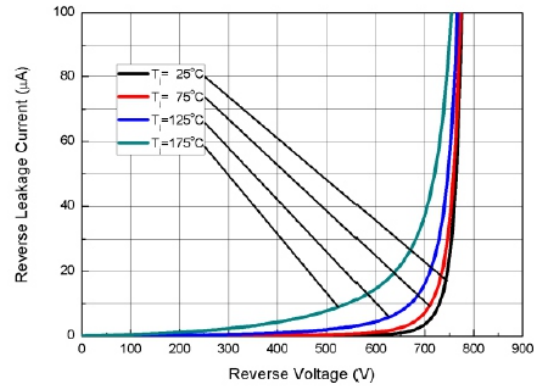


Fig. 2 Reverse Characteristics

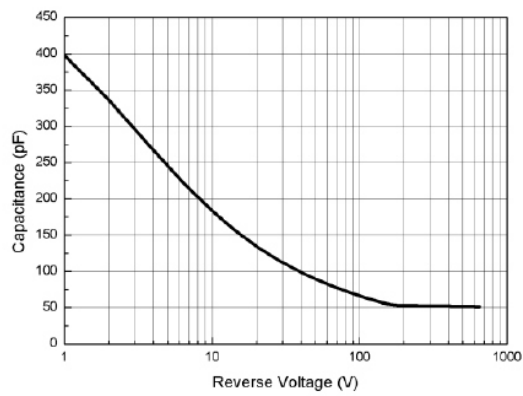


Fig. 3 Capacitance vs. Reverse Voltage

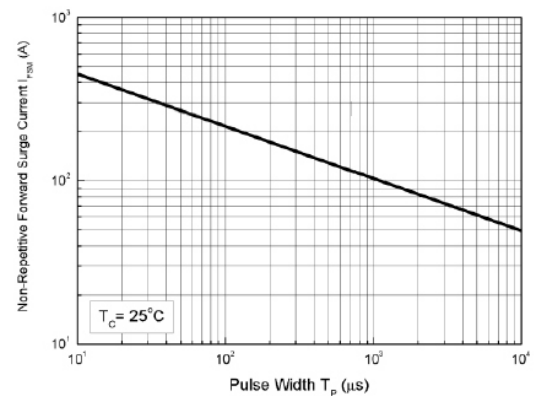


Fig. 4 Non-Repetitive Peak Forward Surge Current (Pulse Mode)

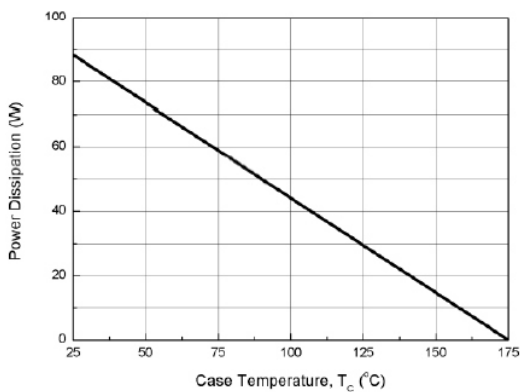


Fig. 5 Power Derating

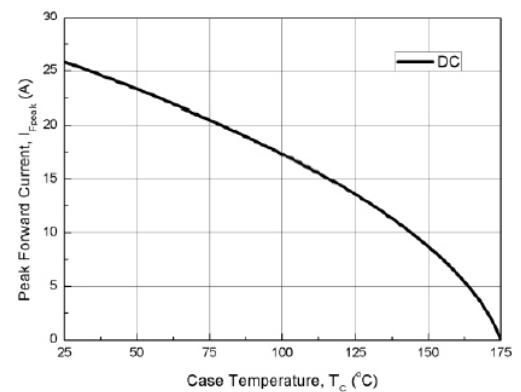
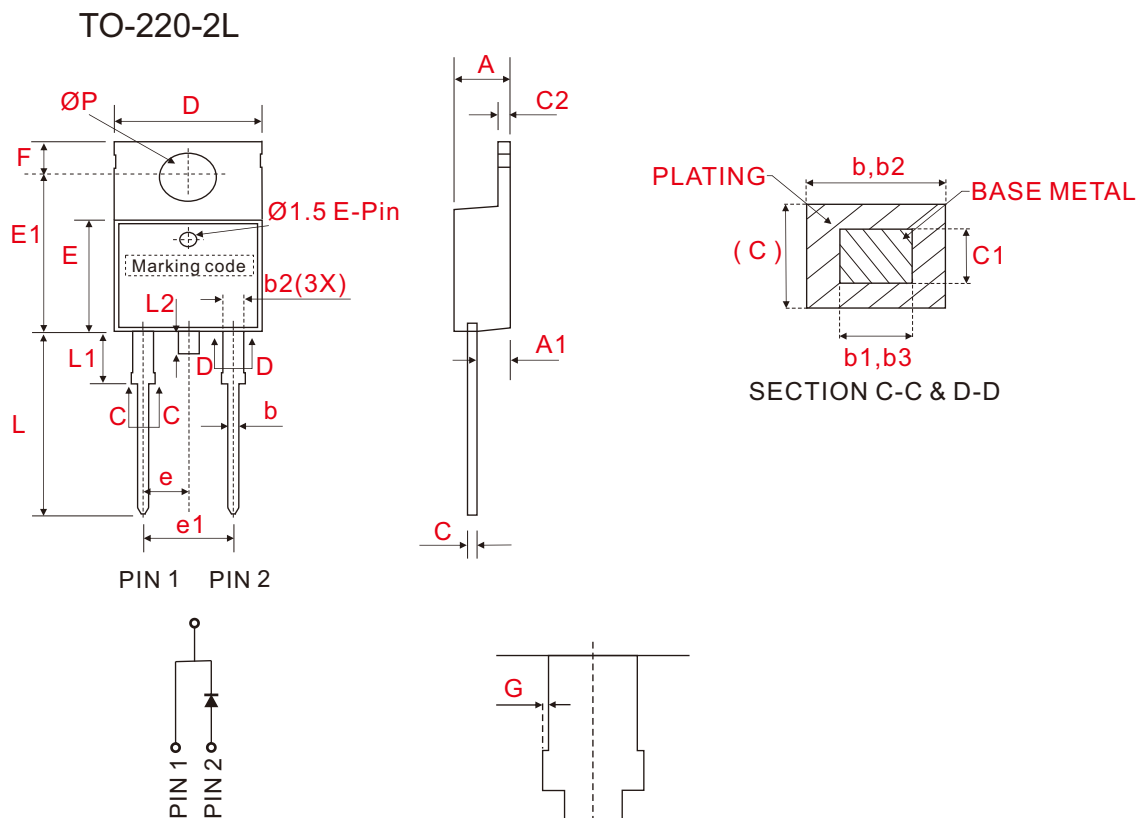


Fig. 6 Current Derating

■ Outline



symbol	Dimensions in inches(millimeters)		
	Min	Nom	Max
A	0.176(4.470)	—	0.184(4.670)
A1	0.099(2.520)	—	0.111(2.820)
b	0.028(0.710)	0.032(0.813)	0.036(0.910)
b1	0.028(0.710)	—	0.036(0.910)
b2	0.046(1.170)	0.050(1.270)	0.054(1.370)
b3	0.046(1.170)	—	0.054(1.370)
c	0.011(0.279)	—	0.019(0.483)
c1	0.011(0.279)	—	0.017(0.432)
c2	0.046(1.170)	—	0.054(1.370)
D	0.394(10.010)	—	0.406(10.310)
E	0.345(8.763)	0.350(8.890)	0.355(9.017)
E1	0.484(12.294)	0.490(12.446)	0.494(12.548)
e	—	0.1(2.54) BSC	—
e1	0.196(4.980)	—	0.204(5.180)
F	0.104(2.642)	0.108(2.743)	0.116(2.946)
G	0.000(0.000)	—	0.005(0.127)
L	0.539(13.7)	—	0.555(14.10)
L1	0.159(4.04)	0.162(4.11)	0.165(4.19)
L2	—	—	0.063(1.60)
$\varnothing P$	0.149(3.790)	—	0.153(3.890)

NOTES:

1. All dimension are in mil[inch].

2. Tolerance: ± 0.004 inch.

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