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Table 1. Maximum Ratings

(T_c = 25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit	Test conditions
Repetitive peak reverse voltage	V _{RRM}	650	V	T _C = 25°C
Surge peak reverse voltage	V _{RSM}	650		T _C = 25°C
DC reverse voltage	V _{DC}	650		T _C = 25°C
Continuous forward current	I _F	17	A	T _C = 25°C
		8		T _C = 135°C
		6		T _C = 154°C
Surge non-repetitive forward current	I _{FSM}	46	A	T _C = 25°C, t _p = 10ms, half sine pulse
Surge repetitive forward current	I _{FRM}	31	A	T _C = 25°C, t _p = 10ms, half sine wave D = 0.1
Power dissipation	P _{tot}	63	W	T _C = 25°C
i ² t value	∫i ² dt	10	A ² s	T _C = 25°C, t _p = 10ms
Operating junction temperature	T _j	-55~175	°C	
Storage temperature	T _{stg}	-55~175	°C	
Mounting torque	M	1	Nm	M3 screw

Table 2. Thermal Resistance

Parameter	Symbol	Values			Unit	Test condition
		Min.	Typ.	Max.		
Thermal resistance from junction to case	R _{th(j-c)}	/	2.4	/	°C/W	

Table 3. Static Electrical Characteristics

(T_j = 25°C, unless otherwise specified)

Parameter	Symbol	Values			Unit	Test conditions
		Min.	Typ.	Max.		
DC blocking voltage	V _{DC}	650	/	/	V	I _R = 100 μA
Forward voltage	V _F	/	1.27	1.45	V	I _F = 6A, T _j = 25°C
		/	1.50	1.70		I _F = 6A, T _j = 175°C
Reverse current	I _R	/	3	48	μA	V _R = 650V, T _j = 25°C
		/	10	192		V _R = 650V, T _j = 175°C

Table 4. Dynamic Electrical Characteristics

(T_j = 25°C, unless otherwise specified)

Parameter	Symbol	Values			Unit	Test conditions
		Min.	Typ.	Max.		
Total capacitance	C	/	353	/	pF	V _R = 0V, f = 1MHz
		/	39	/		V _R = 200V, f = 1MHz
		/	31	/		V _R = 400V, f = 1MHz
Total capacitive charge	Q _C	/	20	/	nC	V _R = 400V
Capacitance stored energy	E _C	/	3	/	μJ	V _R = 400V

Electrical Characteristic Diagrams

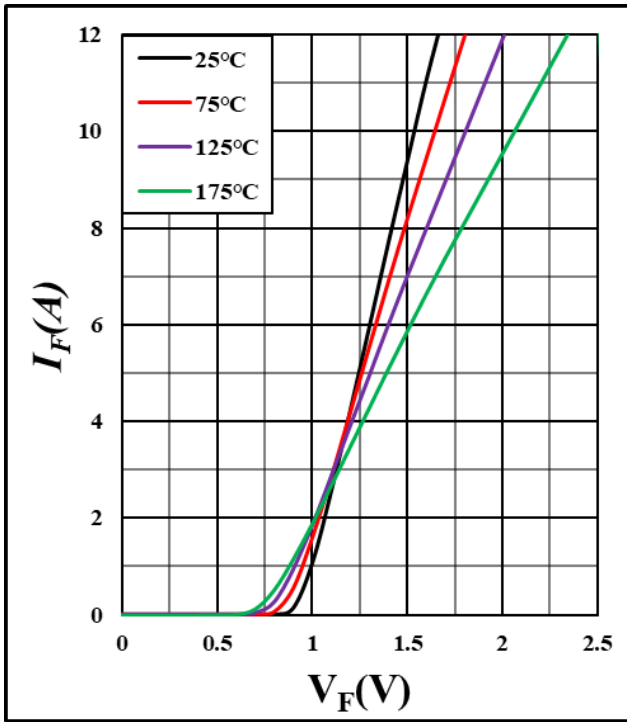


Figure 1. Forward characteristics

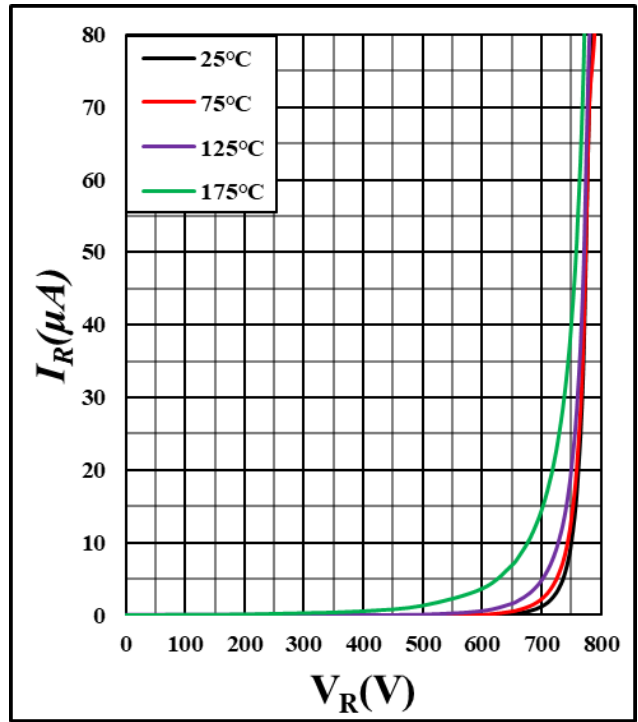


Figure 2. Reverse characteristics

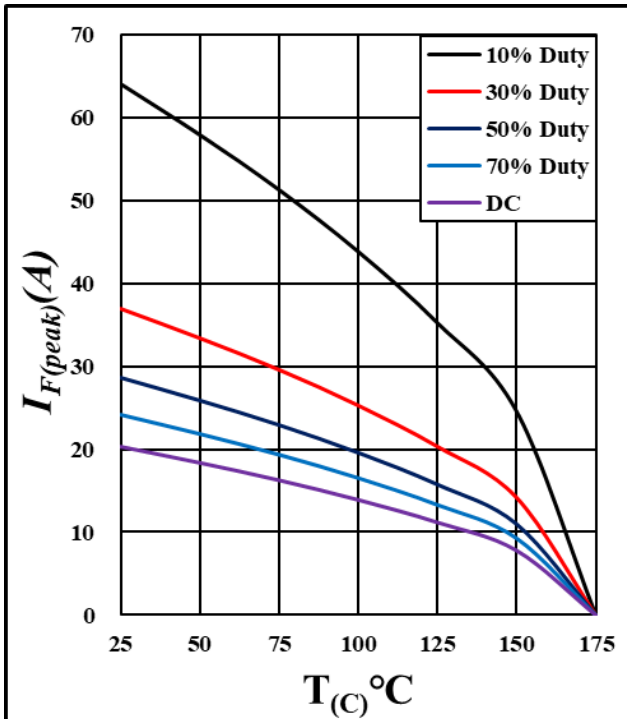


Figure 3. Current derating

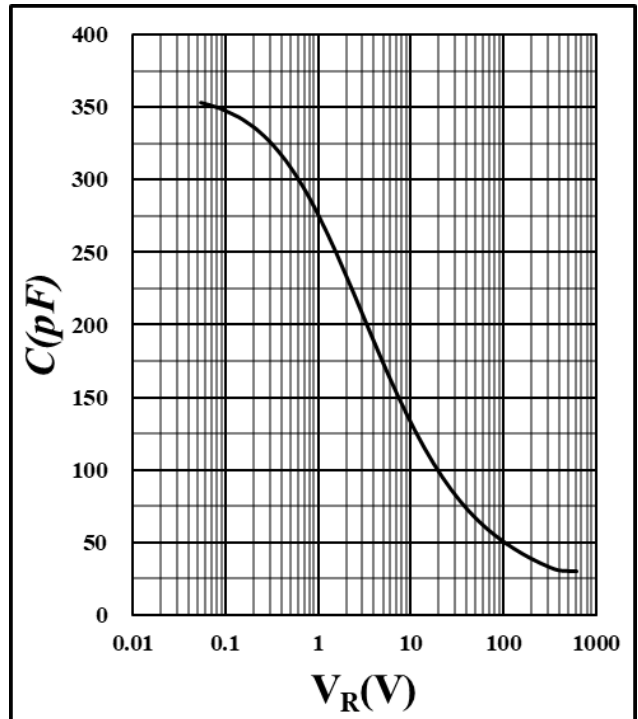


Figure 4. Capacitance vs. reverse voltage

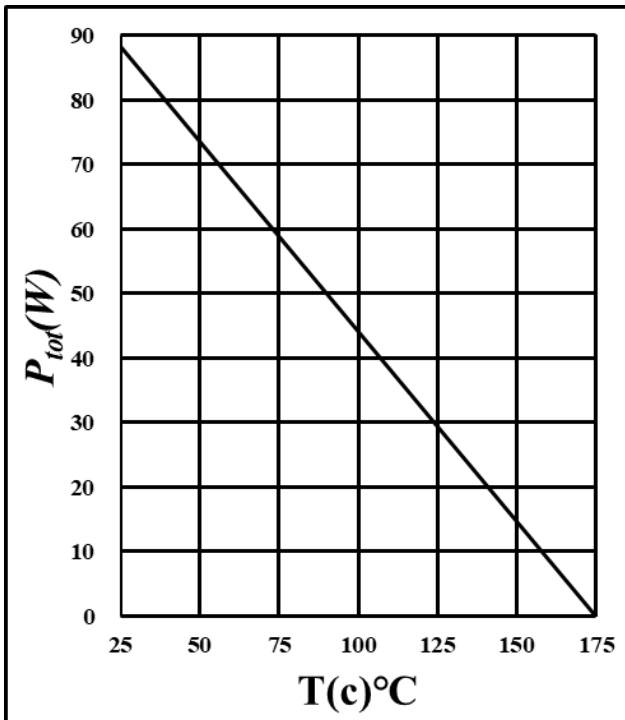


Figure 5. Power derating

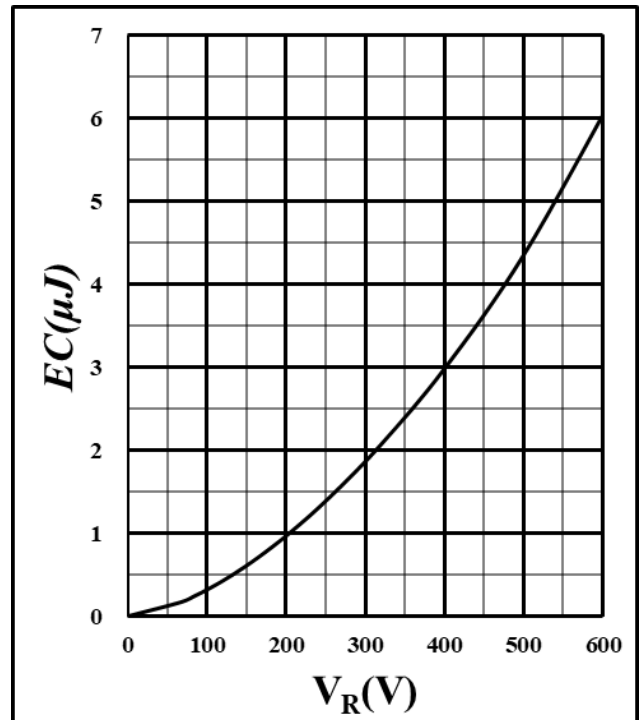


Figure 6. Capacitance stored energy

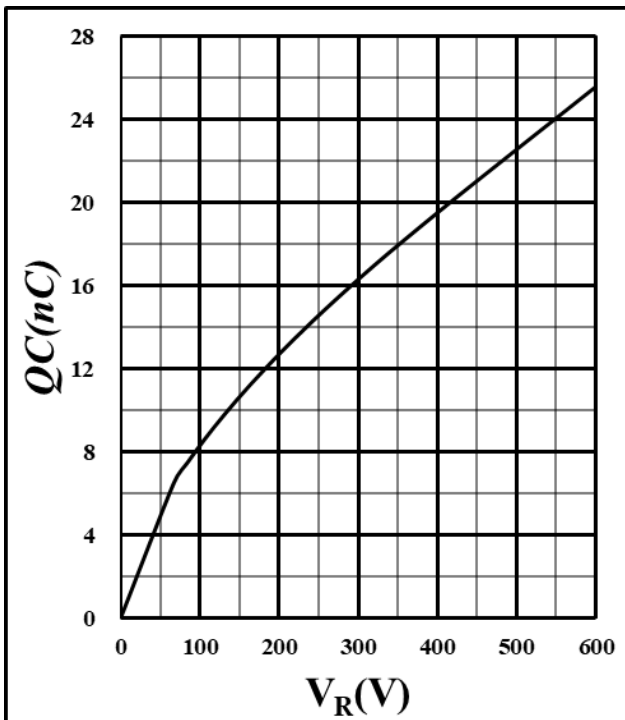
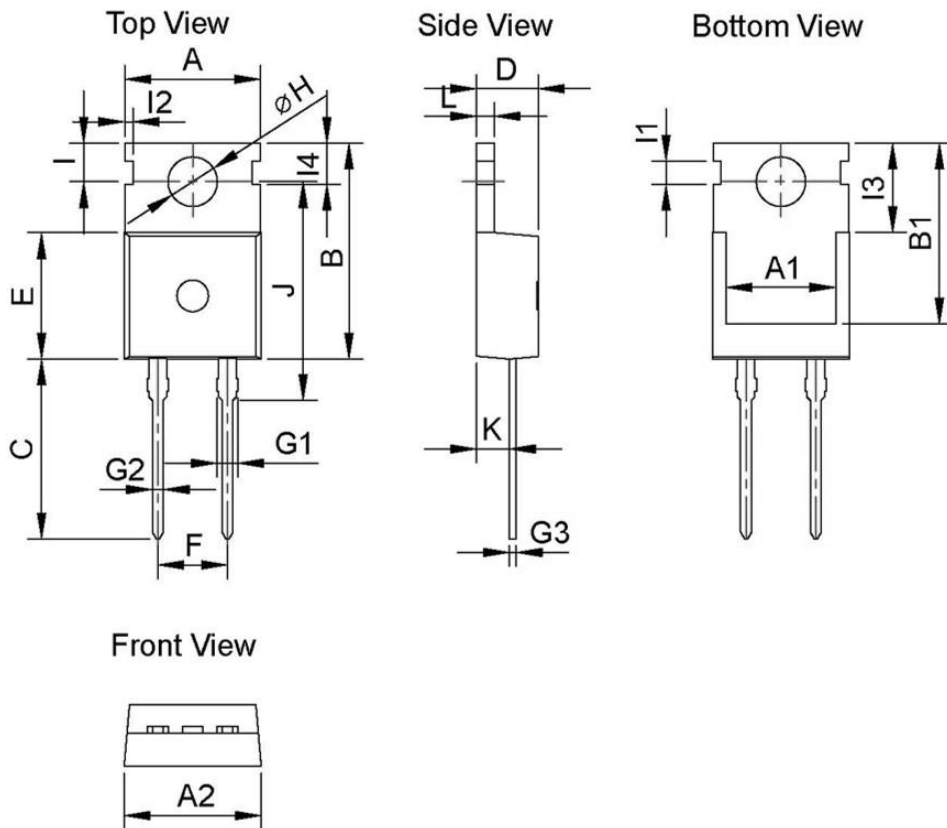


Figure 7. Total capacitance charge vs. reverse voltage

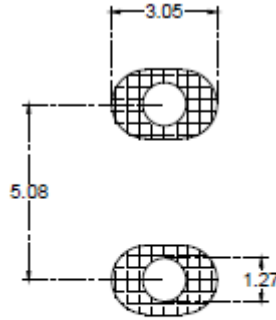
Package Information



Dimension unit: [mm]			
Symbol	Min	Nom	Max
A	9.66	9.90	10.28
A1	6.90	-	-
A2	9.80	10.00	10.20
B	15.60	15.70	15.80
B1	13.16 REF		
C	12.70	13.08	14.27
D	4.30	4.50	4.70
E	8.59	9.20	9.40
F	5.08 BSC		
G1	1.32	1.52	1.62
G2	0.70	0.80	0.95
G3	0.45	0.50	0.60
øH	3.53	3.60	3.70
I	2.70	2.80	2.90
I1	1.70 REF		
I2	0.59 REF		
I3	6.50 REF		
I4	3.00 REF		
J	15.70	15.90	16.25
K	2.20	2.40	2.60
L	1.15	1.30	1.40

Recommended Solder Pad Layout

Note: All dimensions are in mm



TO-220N-2L

Ordering Information

Part number	SDS065J006N4-CSATH
Package	TO-220N-2L
Unit quantity	1000 EA
Packing type	Tube

Important Notices – Read Carefully

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