



## Maximum Ratings

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_{DC}$	-	650	V
Average Rectified Forward Current	$I_{F(AV)1}$	$T_C = 25^\circ\text{C}$	112	A
	$I_{F(AV)2}$	$T_C = 137^\circ\text{C}$	60	A
Repetitive Peak Forward Surge Current	$I_{FRM1}$	10ms, Half Sine pulse, $T_C = 25^\circ\text{C}$	121	A
	$I_{FRM2}$	10ms, Half Sine pulse, $T_C = 110^\circ\text{C}$	68	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM1}$	10ms, Half Sine pulse, $T_C = 25^\circ\text{C}$	300	A
	$I_{FSM2}$	10ms, Half Sine pulse, $T_C = 110^\circ\text{C}$	209	A

## Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	$V_{F1}$	@ 60A, Pulse, $T_J = 25^\circ\text{C}$	1.6	1.8	V
	$V_{F2}$	@ 60A, Pulse, $T_J = 175^\circ\text{C}$	1.95	2.2	V
Reverse Current at DC condition*	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	1	40	$\mu\text{A}$
Reverse Current *	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 175^\circ\text{C}$	10	60	$\mu\text{A}$
Junction Capacitance	$C_T$	$V_R = 0\text{V}$ , $T_J = 25^\circ\text{C}$ , $f = 100\text{MHz}$	3120	-	nF
Reverse Recovery Charge	$Q_c$	$I_F = 60\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ $V_R = 400\text{V}$ , $T_J = 25^\circ\text{C}$	193.4	-	nC
Capacitance Stored Energy	$E_C$	$V_R = 400\text{V}$ , $T_J = 25^\circ\text{C}$	47.37	-	$\mu\text{J}$

\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

## Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +175	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-	-55 to +175	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.74	$^\circ\text{C}/\text{W}$

## Marking Diagram



Where XXXXX is YYWWL

S3D = Device Type  
A = Package type  
60 = Forward Current (60A)  
065 = Reverse Voltage (650V)  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

## Ordering Information

Device	Package	Shipping
S3D60065A	TO-220AC(TO-220-2)	50pcs / tube

## Ratings and Characteristics Curves

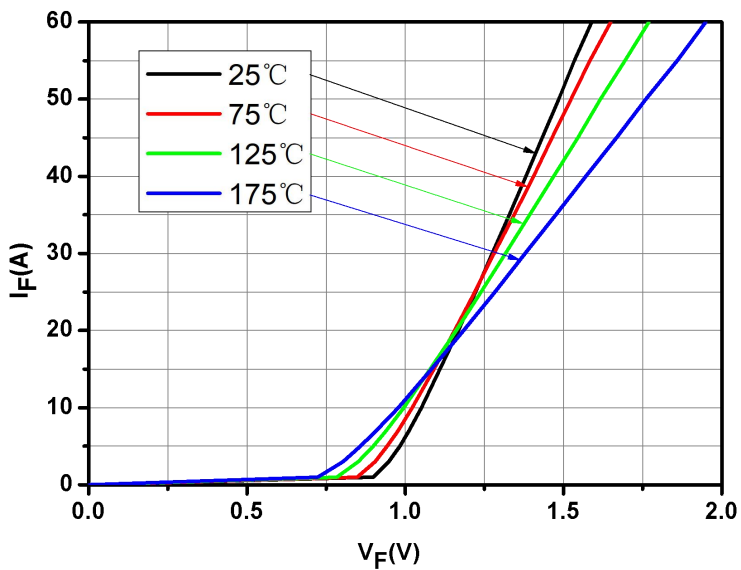


Fig.1-Typical Forward Voltage Characteristics

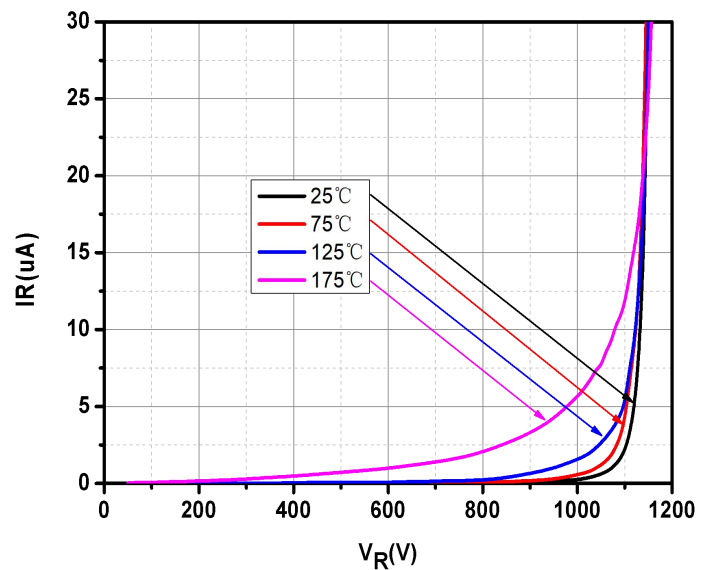


Fig.2-Typical Reverse Characteristics

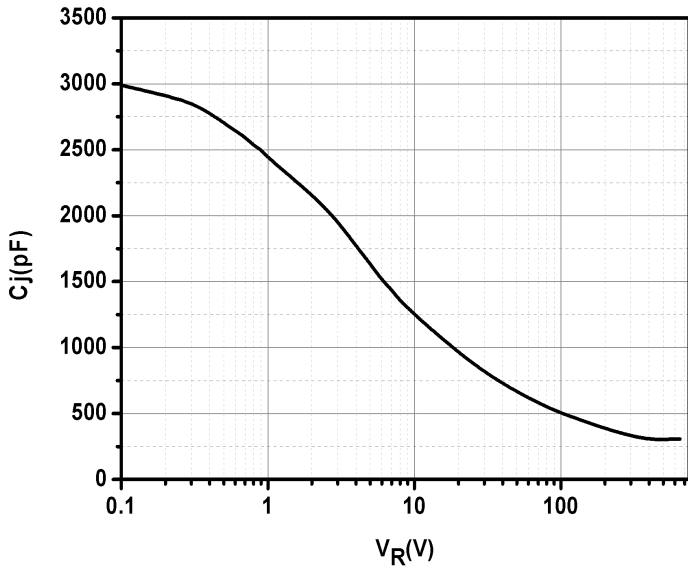


Fig.3-Capacitance vs. Reverse Voltage

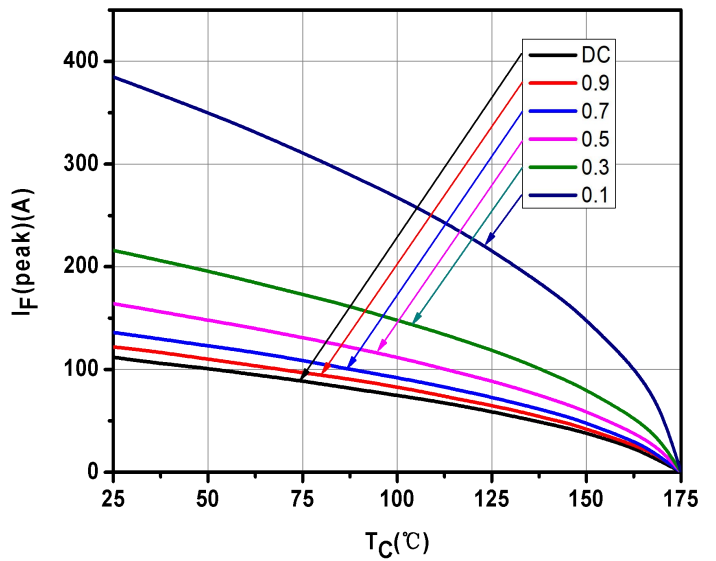


Fig.4-Current Derating

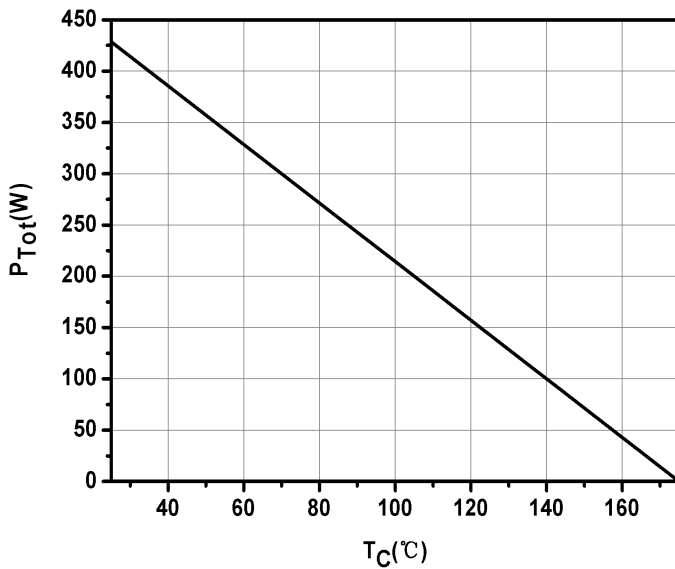


Fig.5-Power Derating

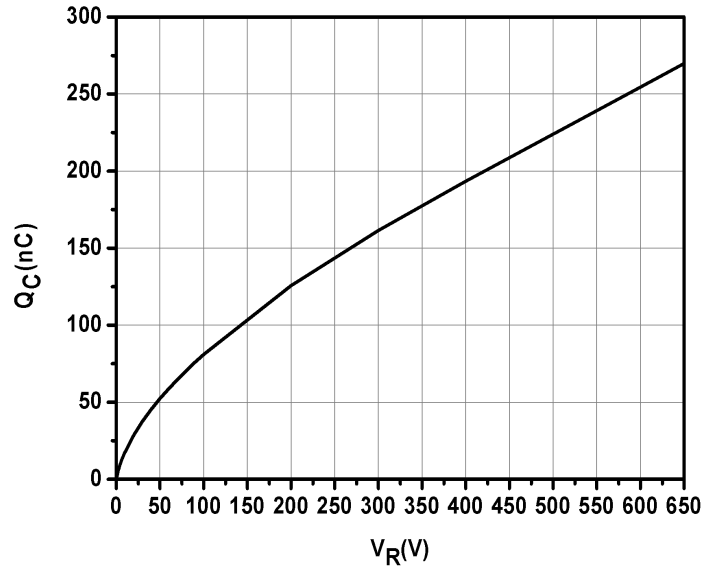


Fig.6-Total Capacitance Charge vs. Reverse Voltage

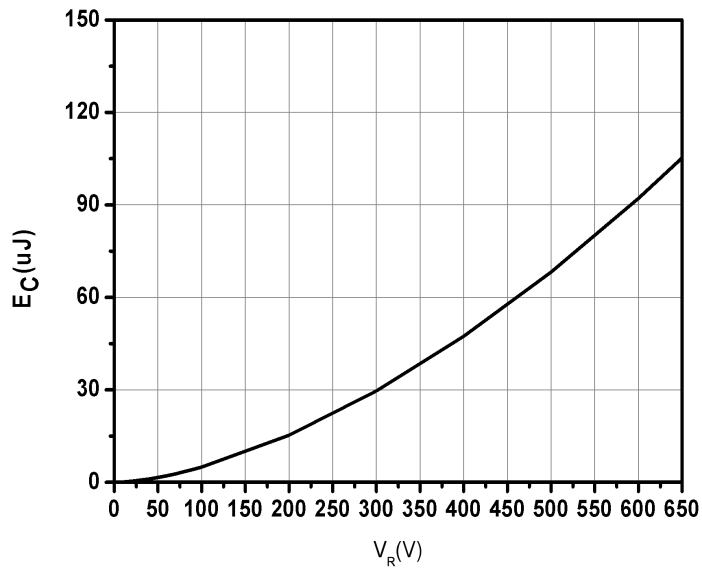
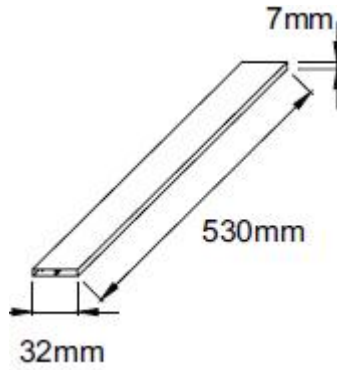


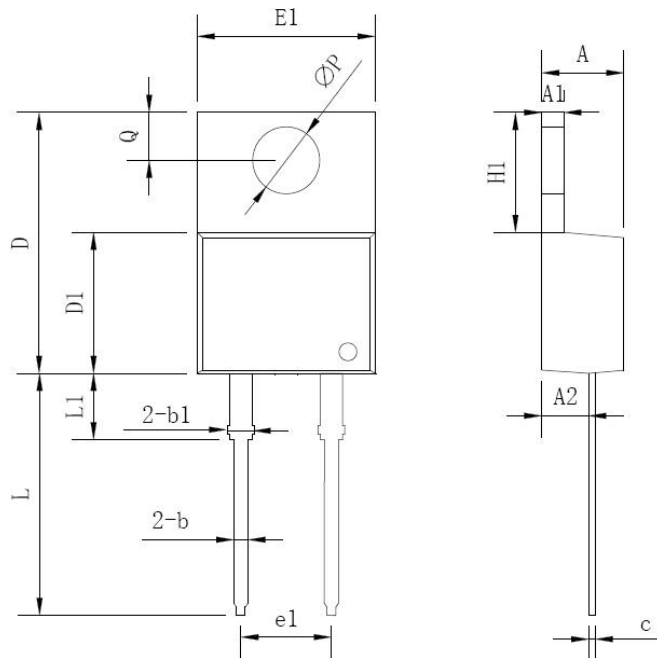
Fig.7-Capacitance Stored Energy

## Tube Specification



TO-220AC(TO-220-2)

## Mechanical Dimensions TO-220AC(TO-220-2)



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	3.56	-	4.83
A1	0.51	-	1.40
A2	2.03	-	2.92
b	0.38	-	1.02
b1	1.14	-	1.78
c	0.31	-	0.61
D	14.22	-	16.51
D1	8.38	-	9.42
E1	9.65	10.16	10.67
e1	-	5.08	-
H1	5.84	-	6.86
L	12.70	-	14.73
L1	-	-	6.35
ØP	-	3.56	-
Q	2.54	-	3.43



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