

### Features

- Zero reverse recovery current
- Zero forward recovery voltage
- Temperature independent switching behavior
- High temperature operation
- High frequency operation

$V_{RRM}$	600V
$I_F (T_C = 149^\circ\text{C})$	6A
$Q_c$	22nC

### Benefits

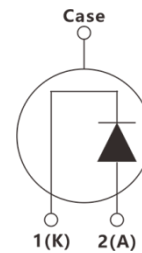
- Unipolar rectifier
- Substantially reduced switching losses
- No thermal run-away with parallel devices
- Reduced heat sink requirements

### Applications

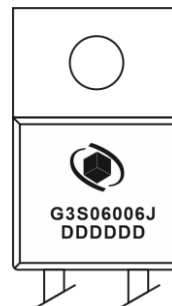
- SMPS, PFC
- Solar application, UPS, EV/HEV
- Motor drives, Wind turbine, Rail traction



TO-220ISO



Inner Circuit



G = GPT  
3 = Gen3  
S = SiC Schottky Diode  
060 = Voltage Rating 600V  
06 = Current Rating 6A  
J = TO-220ISO  
DDDDDD = Traceable Code



**Maximum Ratings** (at  $T_j = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	600	V
Surge Peak Reverse Voltage	$V_{RSM}$	600	V
Continuous Forward Current $T_c = 25^\circ\text{C}$ $T_c = 135^\circ\text{C}$ $T_c = 149^\circ\text{C}$	$I_F$	17.4 7.9 6	A
Repetitive Peak Forward Surge Current $T_c = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	$I_{FRM}$	30	A
Non-Repetitive Forward Surge Current $T_c = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	$I_{FSM}$	66	A
$i^2t$ Value $T_c = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	$\int i^2 dt$	22	$\text{A}^2\text{s}$
Power Dissipation $T_c = 25^\circ\text{C}$ $T_c = 110^\circ\text{C}$	$P_{tot}$	57 25	W
Operating Junction Range	$T_j$	-55 to +175	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +175	$^\circ\text{C}$
Mounting Torque, M3 Screw	M	1	Nm

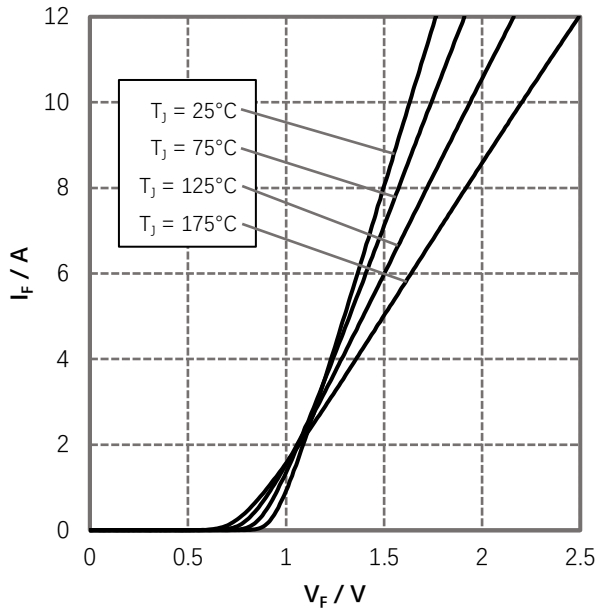
**Electrical Characteristics** (at  $T_J = 25^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Test Condition	Value			Unit
			min.	typ.	max.	
DC Blocking Voltage	$V_{DC}$		600	-	-	V
Forward Voltage	$V_F$	$I_F = 6\text{A}$ $T_J = 25^\circ\text{C}$	-	1.36	1.7	V
		$T_J = 175^\circ\text{C}$	-	1.64	2	
Reverse Current	$I_R$	$V_R = 600\text{V}$ $T_J = 25^\circ\text{C}$	-	0.07	50	$\mu\text{A}$
		$T_J = 175^\circ\text{C}$	-	0.53	100	
Total Capacitance	C	$f = 1\text{MHz}$ $V_R = 0\text{V}$	-	440	-	pF
		$V_R = 200\text{V}$	-	42	-	
		$V_R = 400\text{V}$	-	41	-	
Total Capacitive Charge	$Q_C$	$V_R = 400\text{V}$ $T_J = 25^\circ\text{C}$	-	22	-	nC
Capacitance Stored Energy	$E_C$	$V_R = 400\text{V}$	-	5	-	$\mu\text{J}$

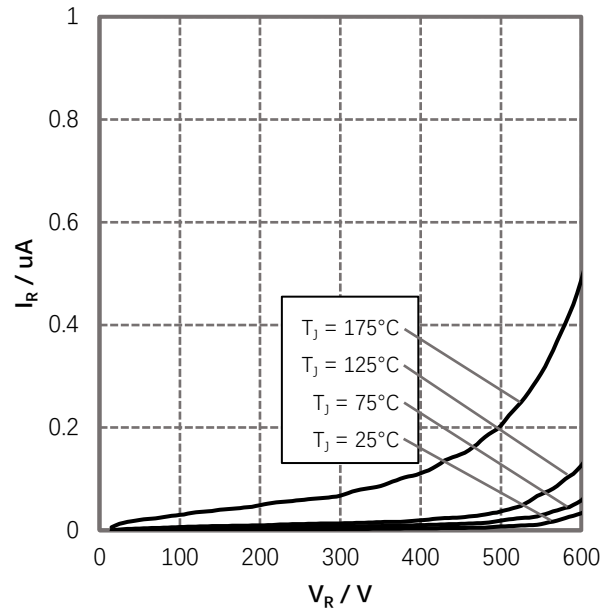
**Thermal Characteristics**

Parameter	Symbol	Test Condition	Value			Unit
			min.	typ.	max.	
Thermal Resistance, junction-case	$R_{th(j-c)}$		-	2.65	-	$^\circ\text{C}/\text{W}$

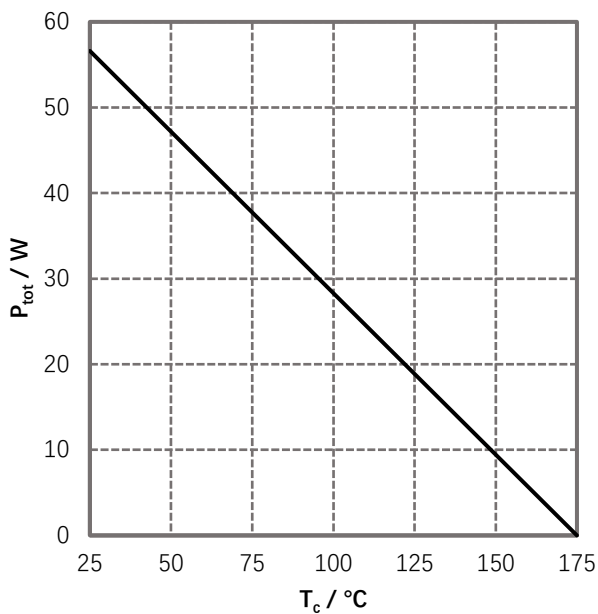
**Typical Characteristics Curves**



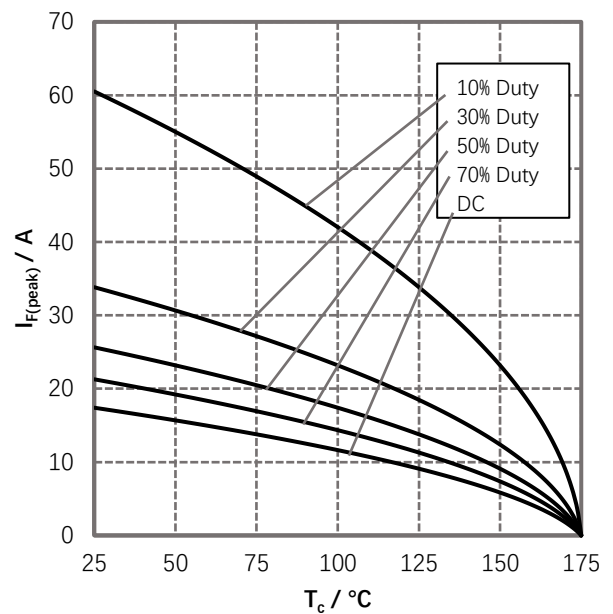
**Figure 1. Forward Characteristics**



**Figure 2. Reverse Characteristics**

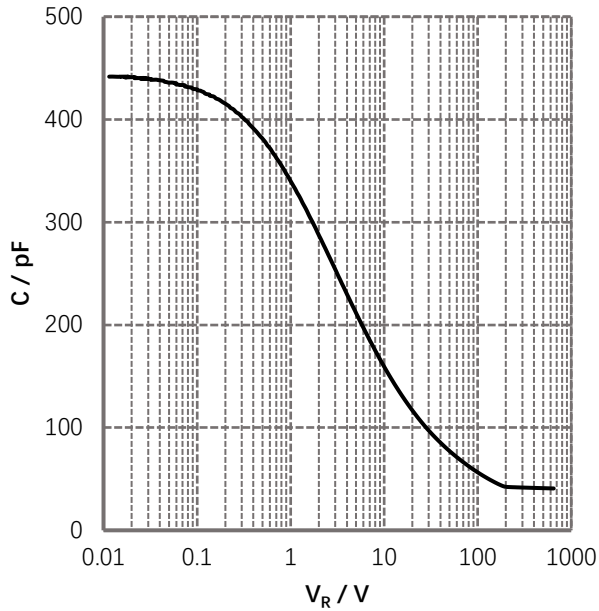


**Figure 3. Power Derating**

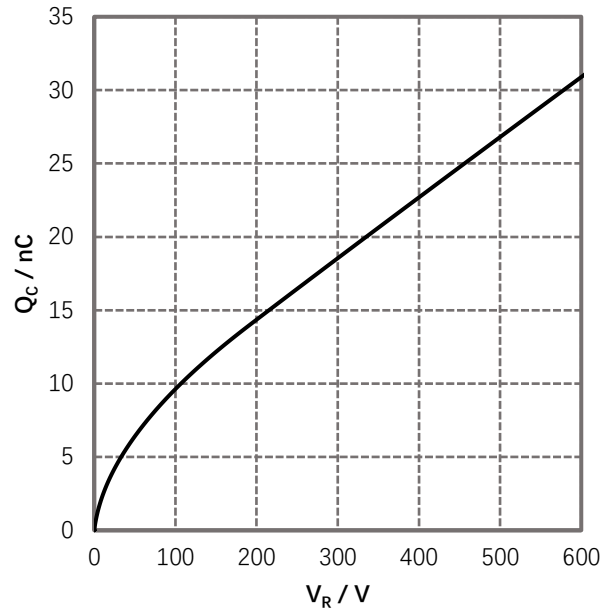


**Figure 4. Current Derating**

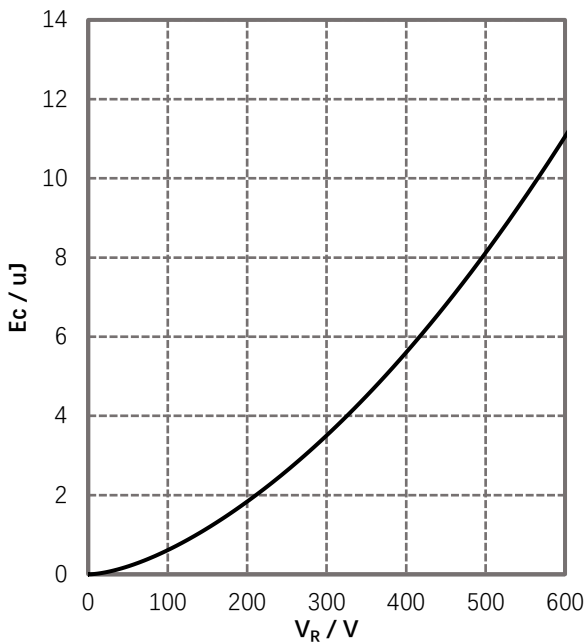
**Typical Characteristics Curves**



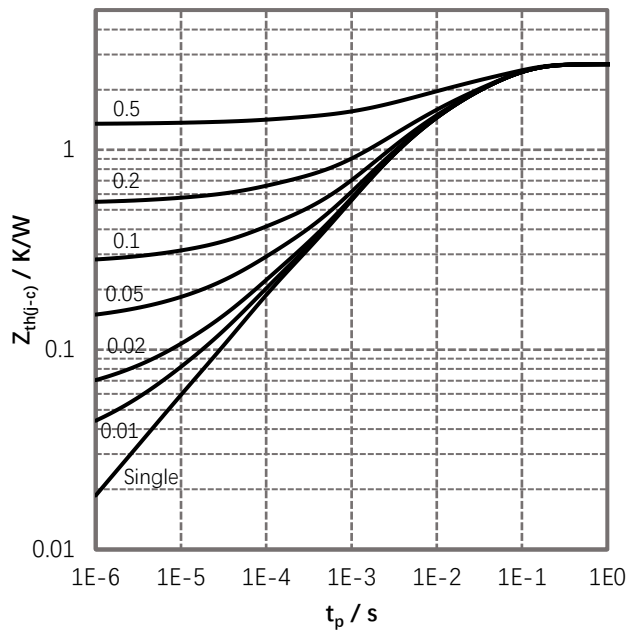
**Figure 5. Capacitance vs. Reverse Voltage**



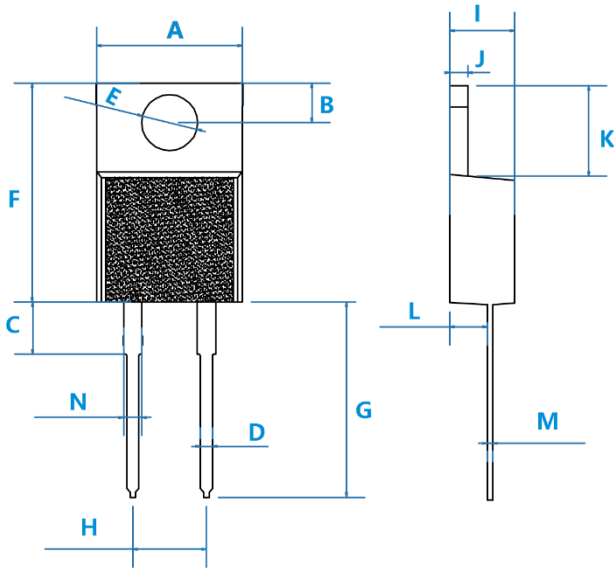
**Figure 6. Reverse Charge vs. Reverse Voltage**



**Figure 7. Capacitance Stored Energy**



**Figure 8. Transient Thermal Impedance**

**Package Dimensions**

DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	9.7	10.4	0.381	0.409
B	2.5	3	0.098	0.118
C	3.5	3.9	0.137	0.153
D	0.7	0.92	0.027	0.036
E	3.72	3.95	0.146	0.155
F	14.51	15.55	0.571	0.612
G	12.95	13.9	0.509	0.547
H	4.95	5.19	0.194	0.204
I	4.38	4.65	0.172	0.183
J	1.15	1.36	0.045	0.053
K	5.86	6.38	0.230	0.251
L	2.35	2.85	0.092	0.112
M	0.32	0.58	0.012	0.022
N	1.18	1.42	0.046	0.055

**Ordering Information**

Part Number	Marking	Package	Packaging Mode
G3S06006J	G3S06006J	TO-220ISO	50pcs/Tube