

Features

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

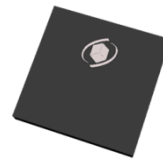
V_{RRM}	650V
$I_F (T_C = 135^\circ\text{C})$	15A
Q_c	32nC

Benefits

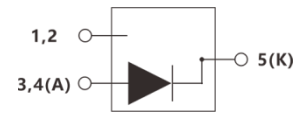
- Unipolar rectifier
- Substantially reduced switching losses
- No thermal run-away with parallel devices
- Reduced heat sink requirements

Applications

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



DFN8x8



Inner Circuit



G = GPT
 4 = Gen4
 S = SiC Schottky Diode
 065 = Voltage Rating 650V
 15 = Current Rating 15A
 QT = DFN8x8
 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}	650	V
Surge Peak Reverse Voltage	V_{RSM}	650	V
Continuous Forward Current $T_c = 25^\circ\text{C}$ $T_c = 125^\circ\text{C}$ $T_c = 135^\circ\text{C}$	I_F	31.9 17.1 15	A
Repetitive Peak Forward Surge Current $T_c = 25^\circ\text{C}$, $t_p = 10\text{ms}$, Half Sine Pulse	I_{FRM}	75	A
Non-Repetitive Forward Surge Current $T_c = 25^\circ\text{C}$, $t_p = 10\text{ms}$, Half Sine Pulse	I_{FSM}	90	A
i^2t Value $T_c = 25^\circ\text{C}$, $t_p = 10\text{ms}$, Half Sine Pulse	$\int i^2 dt$	40.5	A^2s
Power Dissipation $T_c = 25^\circ\text{C}$ $T_c = 110^\circ\text{C}$	P_{tot}	120 52	W
Operating Junction Range	T_j	-55 to +175	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +175	$^\circ\text{C}$

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}		650	-	-	V
Forward Voltage	V_F	$I_F = 15\text{A}$ $T_J = 25^\circ\text{C}$	-	1.5	1.7	V
		$T_J = 175^\circ\text{C}$	-	2.1	2.5	
Reverse Current	I_R	$V_R = 650\text{V}$ $T_J = 25^\circ\text{C}$	-	0.35	50	μA
		$T_J = 175^\circ\text{C}$	-	2.4	100	
Total Capacitance	C	$f = 1\text{MHz}$ $V_R = 0\text{V}$	-	615	-	pF
		$V_R = 200\text{V}$	-	62	-	
		$V_R = 400\text{V}$	-	61	-	
Total Capacitive Charge	Q_C	$V_R = 400\text{V}$ $T_J = 25^\circ\text{C}$	-	32	-	nC
Capacitance Stored Energy	E_C	$V_R = 400\text{V}$	-	8	-	μJ

Thermal Characteristics

Parameter	Symbol	Test Condition	Value			Unit
			min.	typ.	max.	
Thermal Resistance, junction-case	$R_{th(j-c)}$		-	1.25	-	$^\circ\text{C}/\text{W}$



Typical Characteristics Curves

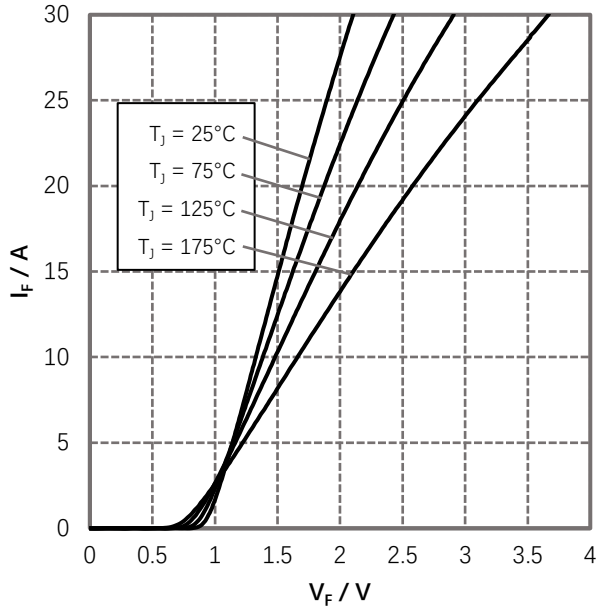


Figure 1. Forward Characteristics

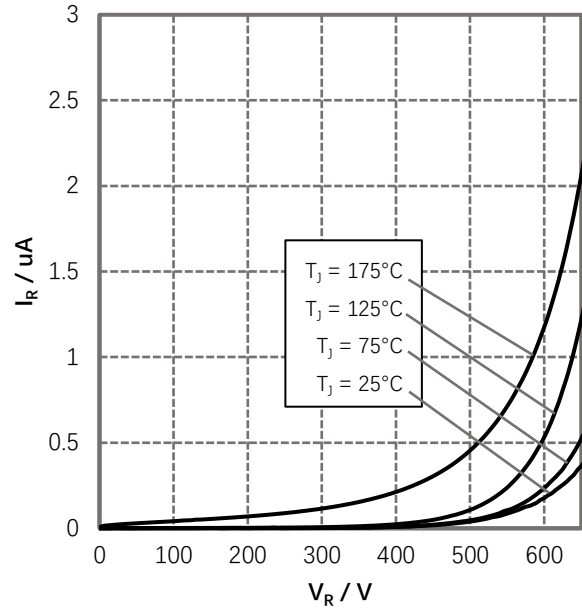


Figure 2. Reverse Characteristics

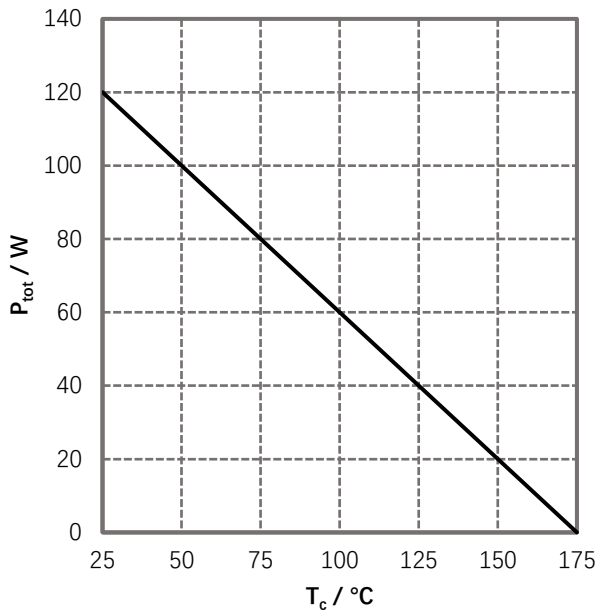


Figure 3. Power Derating

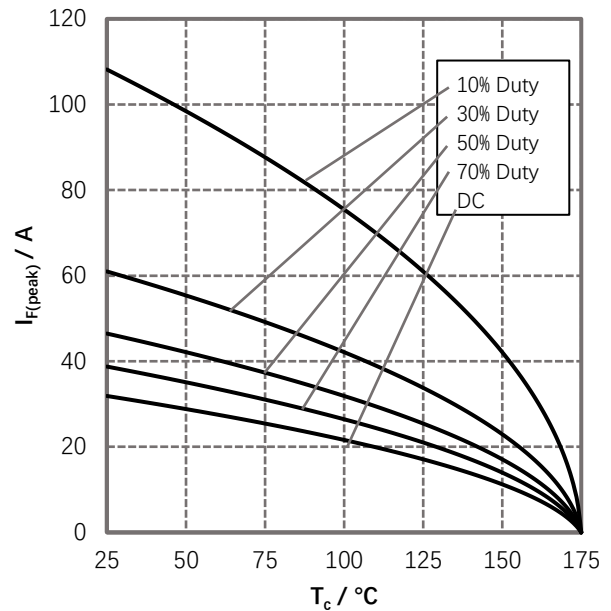


Figure 4. Current Derating



Typical Characteristics Curves

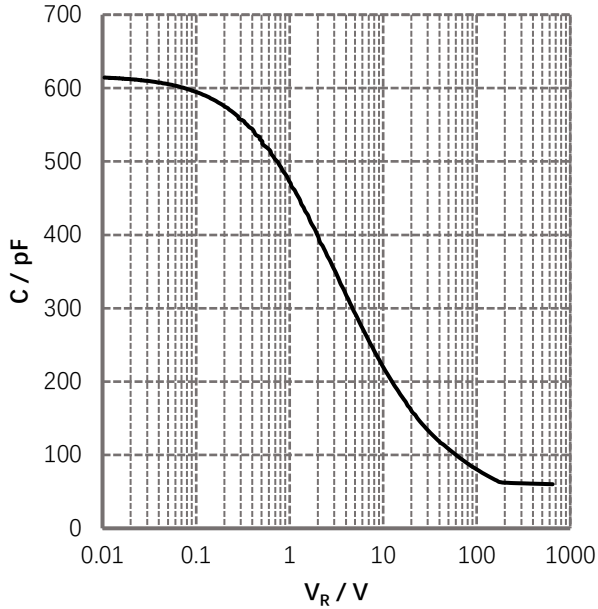


Figure 5. Capacitance vs. Reverse Voltage

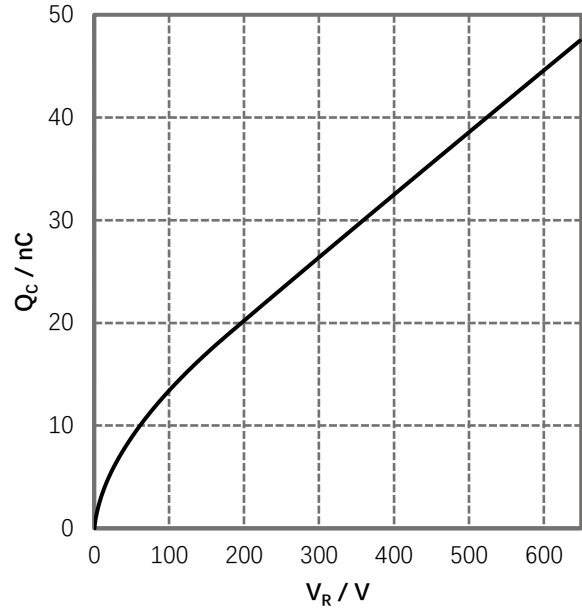


Figure 6. Reverse Charge vs. Reverse Voltage

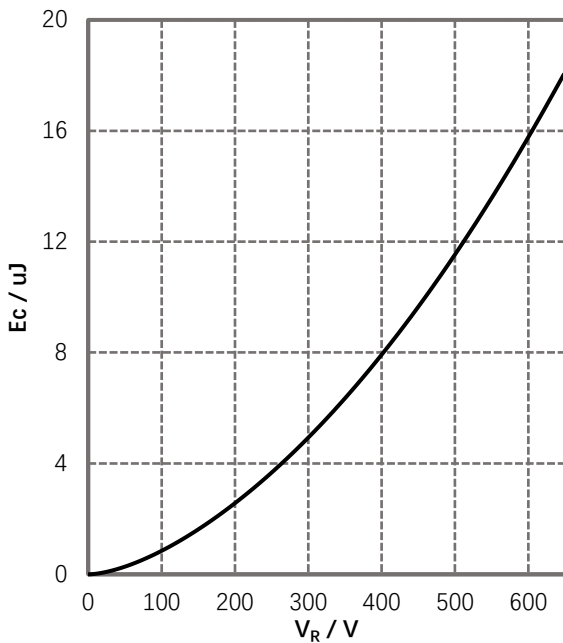


Figure 7. Capacitance Stored Energy

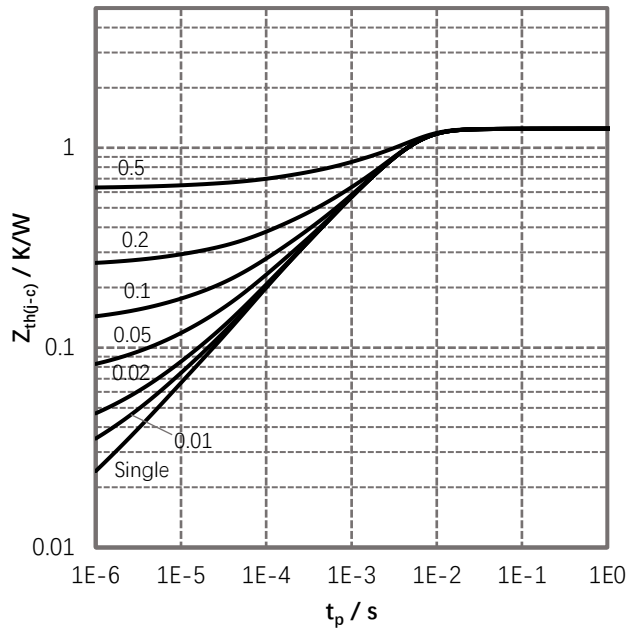
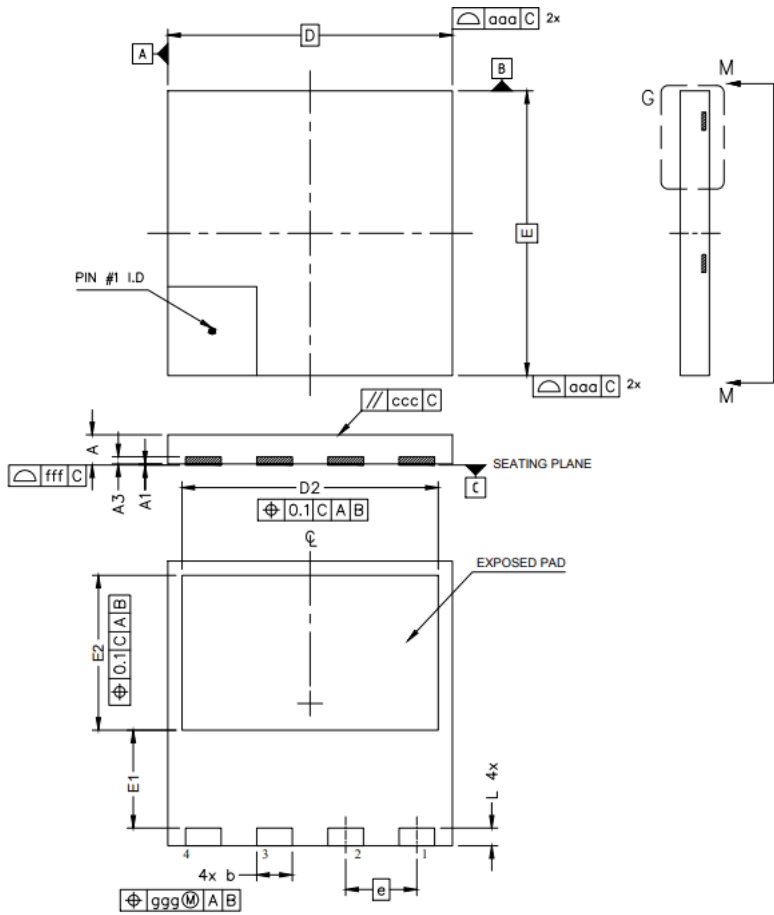


Figure 8. Transient Thermal Impedance



Package Dimensions



SYMBOL	MIN	MAX
A	0.75	0.95
A1	0.00	0.05
A3	0.10	0.30
b	0.90	1.10
D	7.90	8.10
E	7.90	8.10
D2	7.10	7.30
E1	2.65	2.85
E2	4.25	4.45
e	2.00 BSC	
L	0.40	0.60
aaa	0.10	
ggg	0.05	
ccc	0.05	
fff	0.05	

Ordering Information

Part Number	Marking	Package	Packaging Mode
G4S06515QT	G4S06515QT	DFN8x8	3000/Reel

Notes

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- The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics.

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