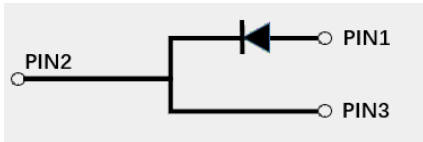
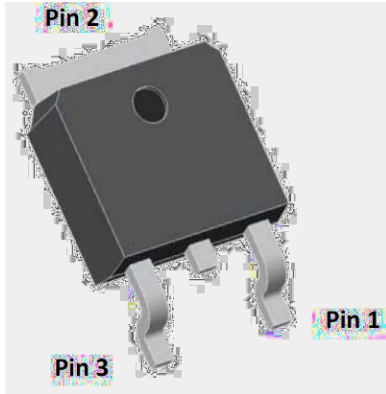


$V_{RRM}$	650V
$I_F$ 135°C	3.5A
$Q_C$	5.2nC



Positive temperature coefficient  
 Temperature-independent switching  
 Maximum working temperature at 175 °C  
 Unipolar devices and zero reverse recovery current  
 Zero forward recovery voltage  
 Essentially no switching losses  
 Reduction of heat sink requirements  
 High-frequency operation  
 Reduction of EMI

Typical applications are in power factor correction(PFC), solar inverter, uninterruptible power supply, motor drives, photovoltaic inverter, electric car and charger.

: TO-252

Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free

: Tin plated leads

: As marked

( $T_C=25$  Unless otherwise specified)

Device marking code			D106502DQG3
Reverse voltage (repetitive peak) @ $T_j=25^\circ\text{C}$	$V_{RRM}$	V	650
Reverse voltage (Surge Peak) @ $T_j=25^\circ\text{C}$	$V_{RSM}$	V	650
Reverse voltage (DC) @ $T_j=25^\circ\text{C}$	$V_{DC}$	V	650
Continuous forward current @ $T_c=25^\circ\text{C}$	$I_F$	A	7.2
Continuous forward current @ $T_c=135^\circ\text{C}$			3.5
Continuous forward current @ $T_c=160^\circ\text{C}$			2
Non-repetitive peak forward surge current @ $T_c=25^\circ\text{C}$ , $t_p=10\text{ms}$ , Half Sine Wave	$I_{FSM}$	A	20
Power Dissipation @ $T_c=25^\circ\text{C}$	$P_{TOT}$	W	42
Power Dissipation @ $T_c=110^\circ\text{C}$			18
$i^2t$ Value @ $T_c=25^\circ\text{C}$ , $t_p=10\text{ms}$	$i^2t$	$\text{A}^2\text{S}$	2
Operating junction and Storage temperature range	$T_j, T_{stg}$	$^\circ\text{C}$	-55 to +175



Forward voltage drop	$V_F$	V	$I_F=2A, T_J=25^\circ C$	1.5	1.6
			$I_F=2A, T_J=175^\circ C$	2.2	-
Reverse leakage current	$I_R$	$\mu A$	$V_R=650V, T_J=25^\circ C$	0.1	10
			$V_R=650V, T_J=175^\circ C$	1	-
Total capacitive charge	$Q_C$	nC	$V_R=400V, T_J=25^\circ C, Q_C=\int_0^{V_R} I_R(V) dV$	5.2	-
Total capacitance	C	pF	$V_R=0V, f=1MHz$	84	-
			$V_R=200V, f=1MHz$	9.8	-
			$V_R=400V, f=1MHz$	9.4	-
Capacitance Stored Energy	$E_C$	$\mu J$	$V_R=400V$	0.6	-

( $T_a=25$  Unless otherwise specified)

Thermal resistance	$R_{J-C}$	$^\circ C/W$	3.62

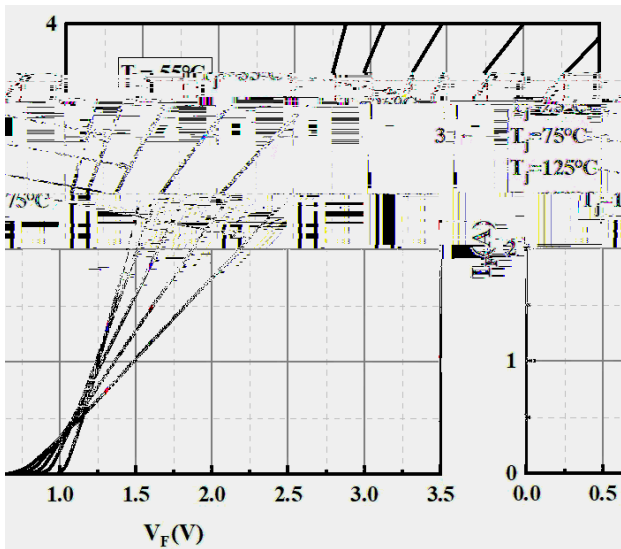


Figure 1. Forward Characteristics

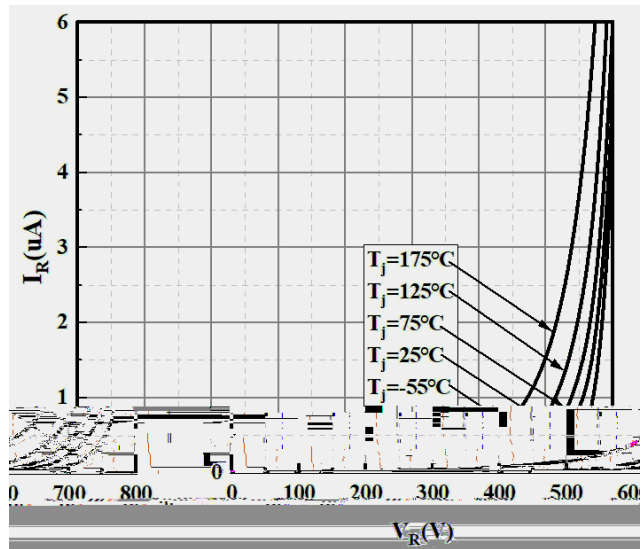


Figure2. Reverse Characteristic

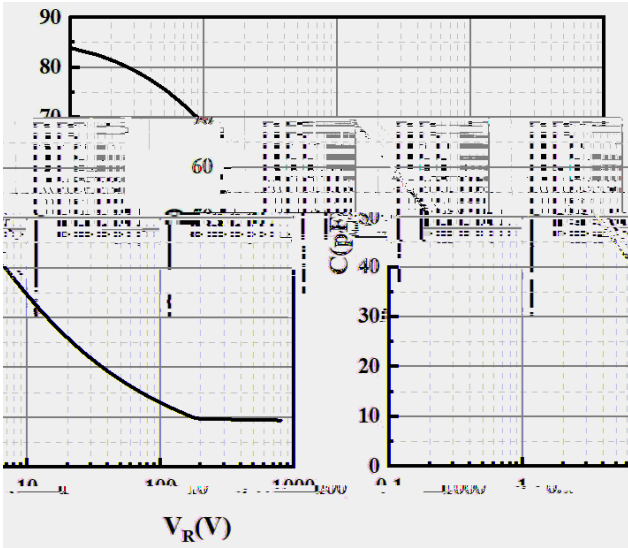


Figure 3. Capacitance vs. Reverse Voltage

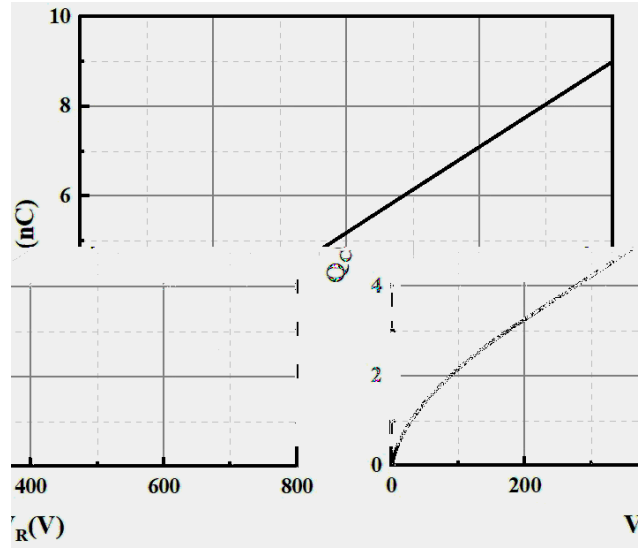


Figure 4. Total Capacitance Charge vs. Reverse Voltage

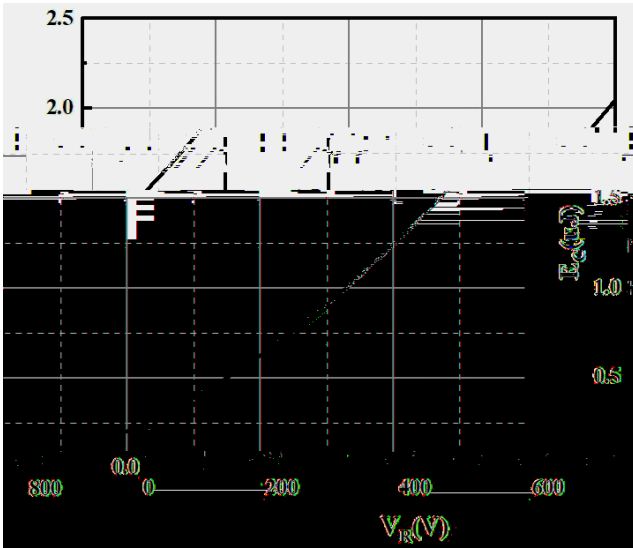


Figure 5. Capacitance Stored Energy

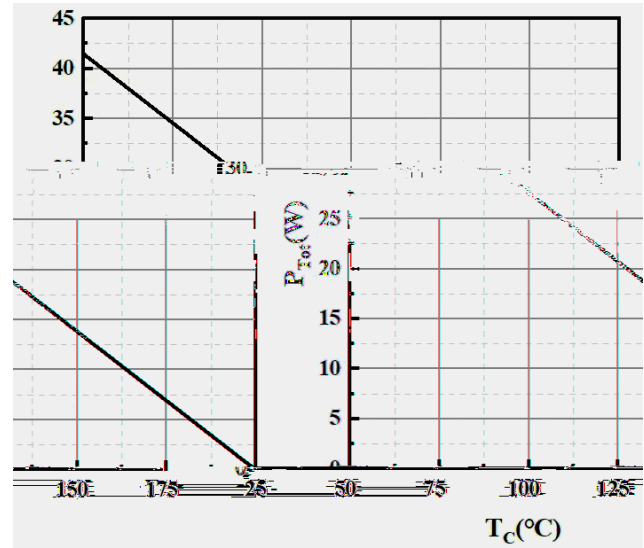


Figure 6. Power Derating

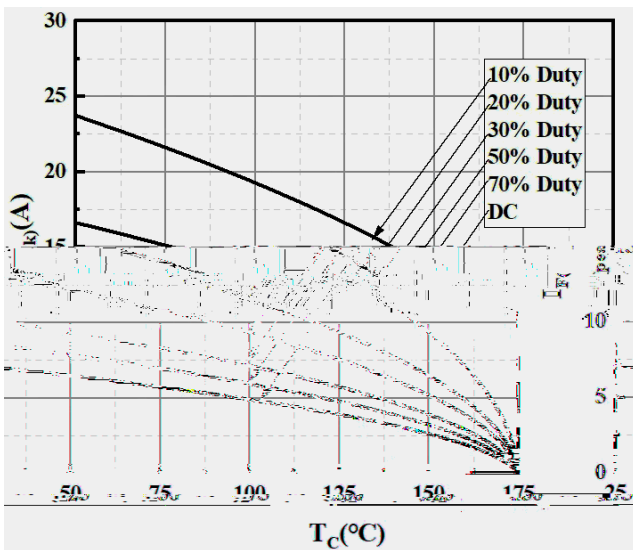


Figure 7. Current Derating

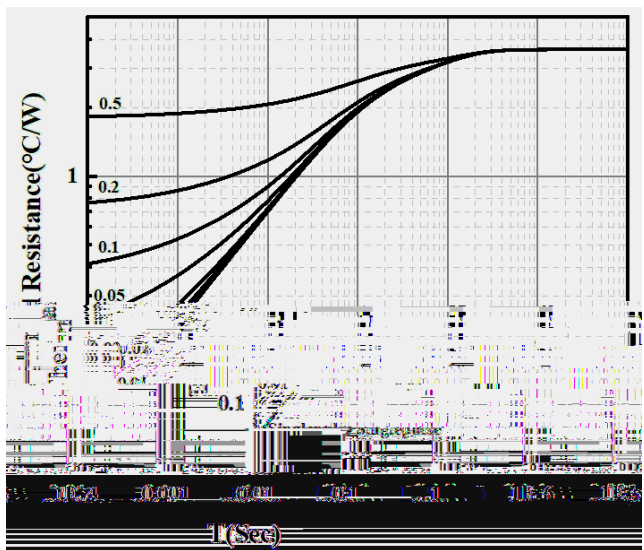
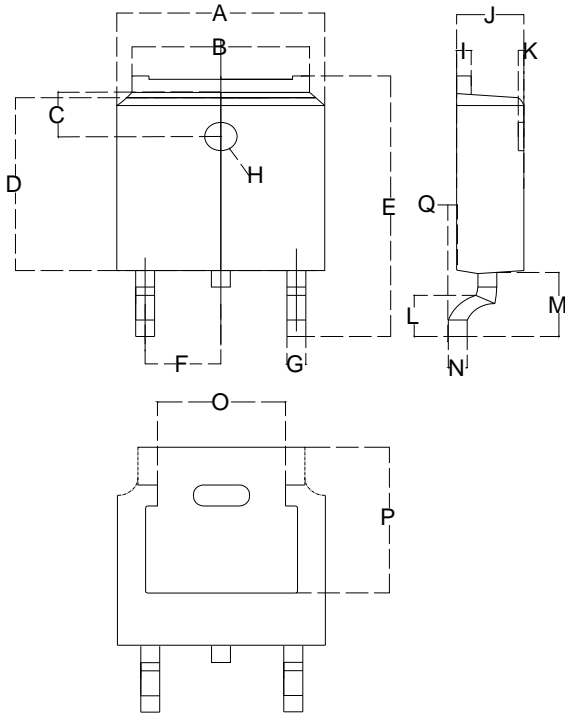


Figure 8. Transient Thermal Impedance



TO-252



TO-252		
Dim	Min	Max
A	6.500	6.700
B	5.100	5.460
C	1.400	1.800
D	6.000	6.200
E	10.000	10.400
F	2.166	2.366
G	0.660	0.860
H	1.050	1.350
I	0.460	0.580
J	2.200	2.400
K	0	0.300
L	0.890	2.290
M	2.730	3.080
N	0.430	0.580
O	4.20	4.95
P	5.15	5.45
Q	0	0.2



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