

Positive temperature coefficient  
 Temperature-independent switching  
 Maximum working temperature at 175 °C  
 Unipolar devices and zero reverse recovery current  
 Zero forward recovery current  
 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-247AB

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

: Tin plated leads

: As marked

( $T_c=25$  Unle › ) M

Device marking code			D106520NCTQG2
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	27/54
Continuous forward current @ $T_c=135^\circ\text{C}$			13/26
Continuous forward current @ $T_c=150^\circ\text{C}$			10/20
Non-repetitive peak forward surge current @ $T_c=25^\circ\text{C}$ , $t_p=10\text{ms}$ , Half Sine Wave	$I_{FSM}$	A	80 <sup>(1)</sup>
Power Dissipation @ $T_c=25^\circ\text{C}$	$P_{TOT}$	W	112/230
Power Dissipation @ $T_c=110^\circ\text{C}$			48/100
$i^2t$ Value @ $T_c=25^\circ\text{C}$ , $t_p=10\text{ms}$	$i^2t$	A <sup>2</sup> S	32 <sup>(1)</sup>
Operating junction and Storage temperature range	$T_j, T_{stg}$	°C	-55 to +175

(1) Per Leg, (2) Per Device



(Per Leg)

Forward voltage drop	$V_F$	V	$I_F=10A, T_J=25^\circ C$	1.35	1.55
			$I_F=10A, T_J=175^\circ C$	1.8	-
Reverse leakage current	$I_R$	$\mu A$	$V_R=650V, T_J=25^\circ C$	0.5	25
			$V_R=650V, T_J=175^\circ C$	2	-
Total capacitive charge	$Q_C$	nC	$V_R=400V, T_J=25^\circ C, Q_C=\int_0^{V_R} C(V)dV$	30	-
Total capacitance	C	$\mu F$	$V_R=0V, f=1MHz$	543	-
			$V_R=200V, f=1MHz$	55	-
			$V_R=400V, f=1MHz$	52	-
Capacitance Stored Energy	$E_C$	$\mu J$	$V_R=400V$	3.7	-

( $T_a=25$  Unless otherwise specified)

Thermal resistance	$R_{J-C}$	$^\circ C/W$	1.34 <sup>(1)</sup> 0.65 <sup>(2)</sup>

(<sup>1</sup>) Per Leg, (<sup>2</sup>) Per Device

(Per Leg)

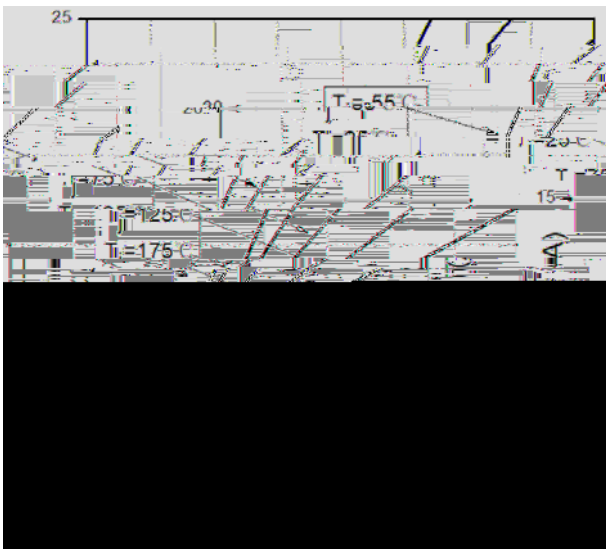


Figure 1. Forward Characteristics

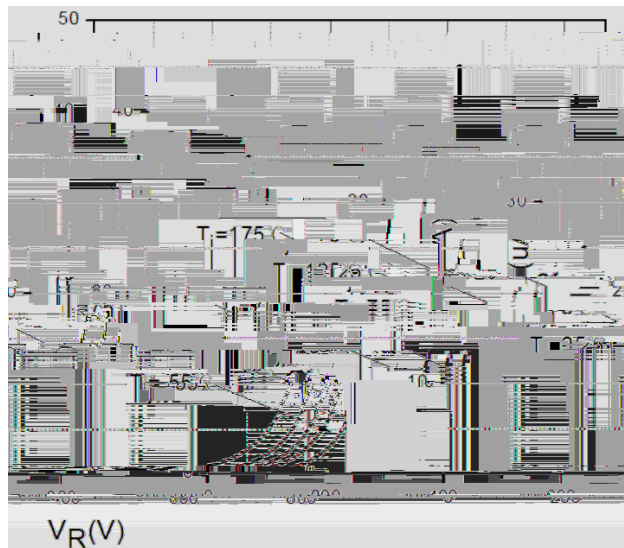


Figure2. Reverse Characteristic

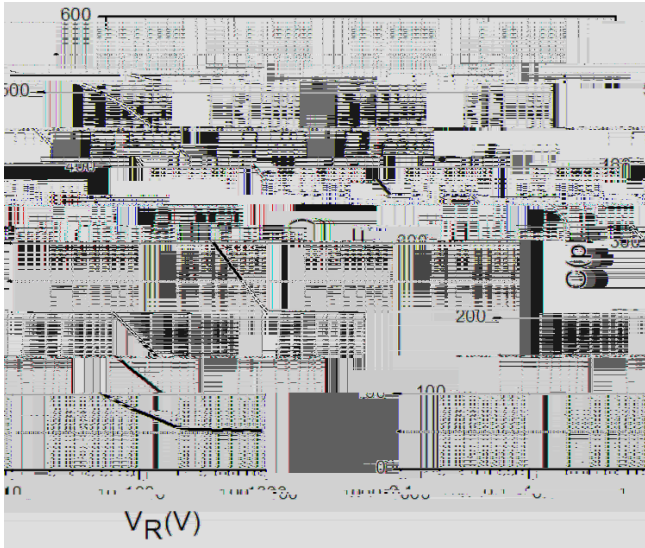


Figure 3. Capacitance vs. Reverse Voltage

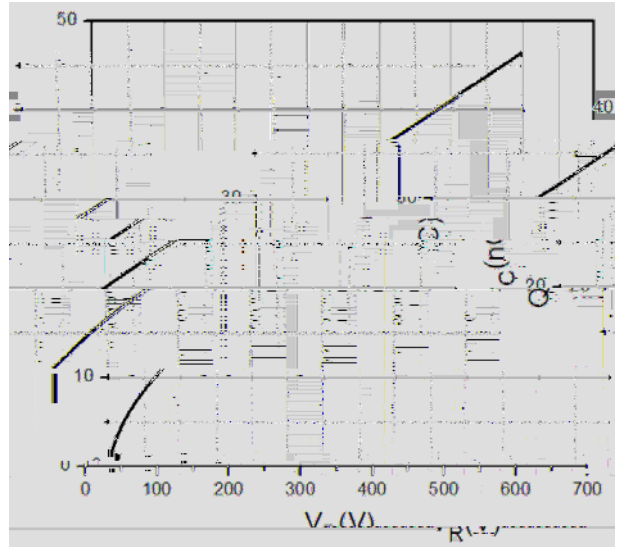


Figure 4. Total Capacitance Charge vs. Reverse Voltage

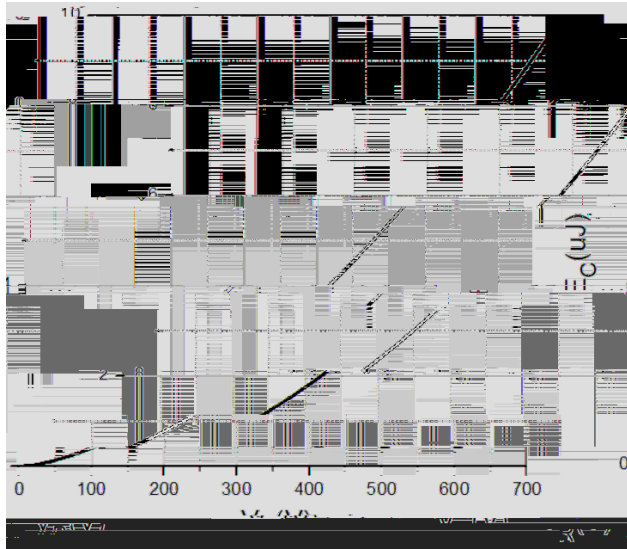


Figure 5. Capacitance Stored Energy

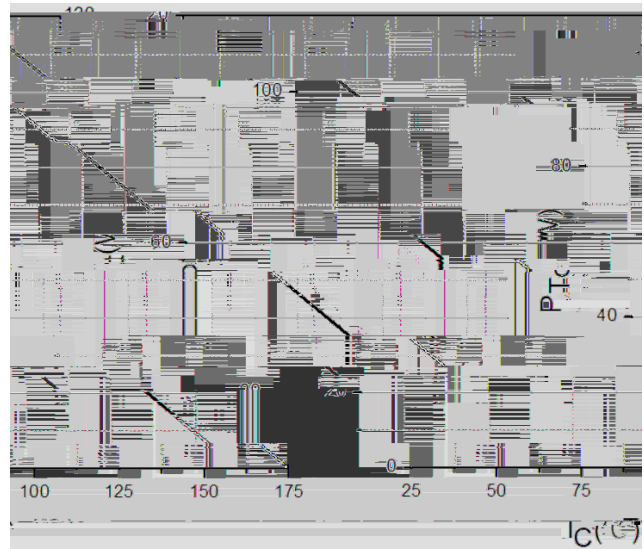


Figure 6. Power Derating

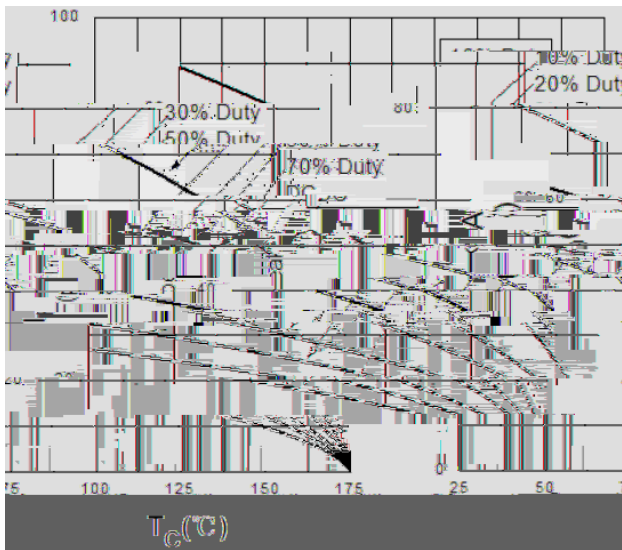


Figure 7. Current Derating

(Device)

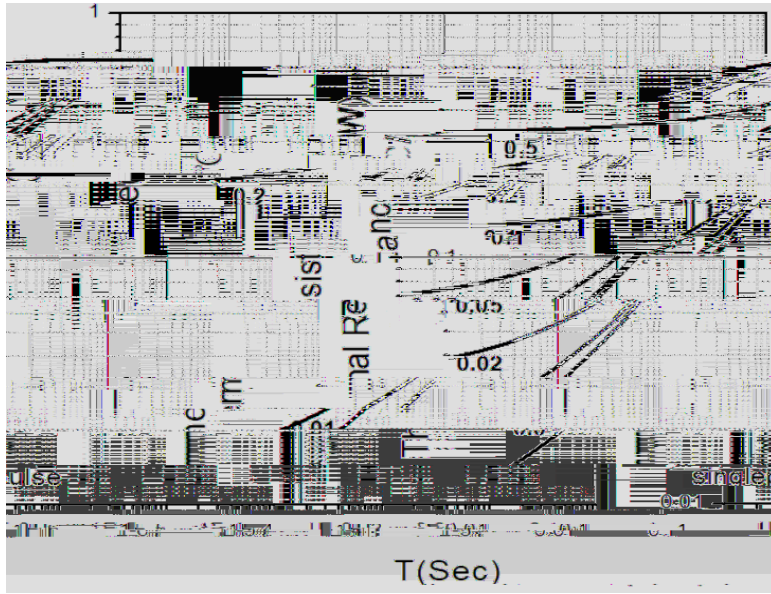
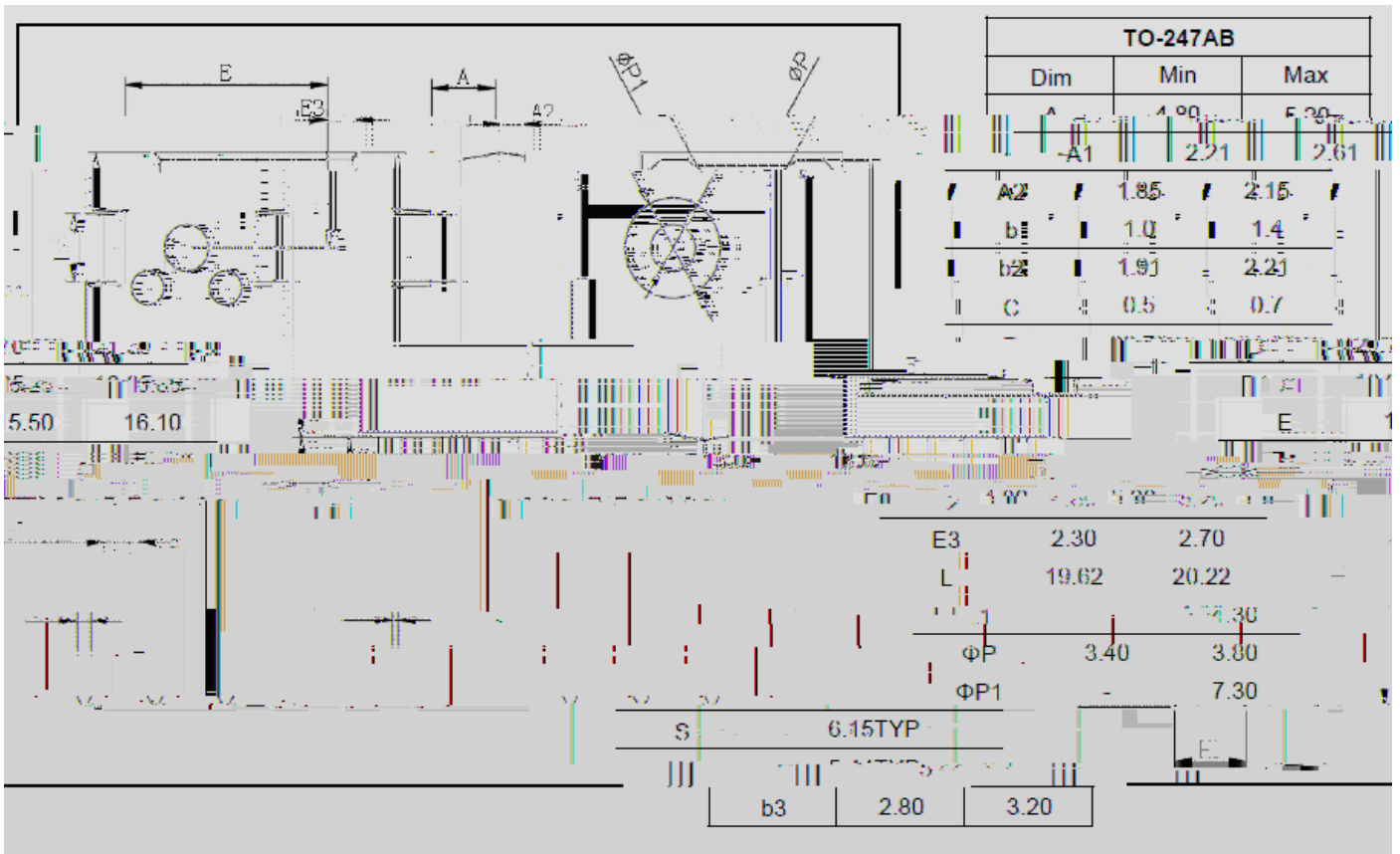


Figure 8. Transient Thermal Impedance





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