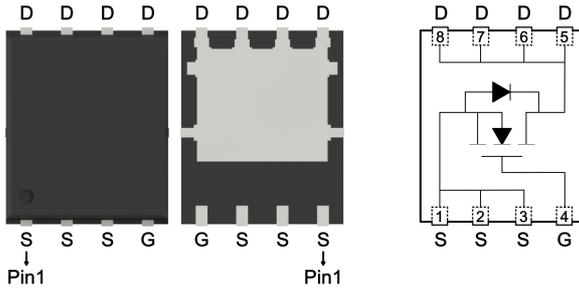


Product Summary

BV_{DSS}	80	V
$R_{DS(ON)}$ typ. @ $V_{GS}=10V, I_D=10A$	9	m Ω
I_D @ $V_{GS}=10V, T_C=25^\circ C$	42	A
I_D @ $V_{GS}=10V, T_A=25^\circ C$	10	

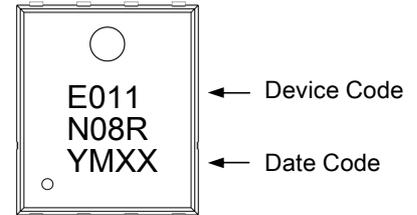
DFN5x6



Features

- Low Gate Charge
- Fast Switching Characteristic
- Pb-free lead plating and halogen-free

Marking



YMXX: Date Code Marking

Y: Year Code, the last digit of Christian year

M: Month Code

A: Jan	B: Feb	C: Mar	D: Apr	E: May	F: Jun
G: Jul	H: Aug	J: Sep	K: Oct	L: Nov	M: Dec

XX: Production Serial Number, 01~99

Ordering Information

Device	Package	Shipping
MTE011N08RH8-0-T6-G	DFN5x6	3000pcs / Tape & Reel

0: Product rank, zero for no rank products.

T6: Packing spec, T6 : 3000pcs / tape & reel, 13" reel

G: Environment friendly grade: S for RoHS compliant products, G for RoHS compliant and green compound products.

Absolute Maximum Ratings ($T_A=25^\circ C$)

Parameter	Symbol	Value	Unit	
Drain-Source Voltage	V_{DS}	80	V	
Gate-Source Voltage	V_{GS}	± 20	V	
Continuous Drain Current @ $V_{GS}=10V, T_C=25^\circ C$	I_D	42	A	
Continuous Drain Current @ $V_{GS}=10V, T_C=100^\circ C$		27		
Continuous Drain Current @ $V_{GS}=10V, T_A=25^\circ C$		10		
Continuous Drain Current @ $V_{GS}=10V, T_A=70^\circ C$		7.8		
Pulsed Drain Current	I_{DM}	168	A	
Continuous Body Diode Forward Current @ $T_C=25^\circ C$	I_S	38	A	
Pulsed Body Diode Forward Current @ $T_C=25^\circ C$	I_{SM}	152	A	
Avalanche Current @ $L=0.1mH$	I_{AS}	18	A	
Avalanche Energy @ $L=0.5mH$	E_{AS}	36	mJ	
Total Power Dissipation	P_D	$T_C=25^\circ C$	46	W
		$T_C=100^\circ C$	18	
		$T_A=25^\circ C$	2.6	
		$T_A=70^\circ C$	1.7	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	$^\circ C$	
Steady State Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	2.7	$^\circ C/W$	
Steady State Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	48		



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

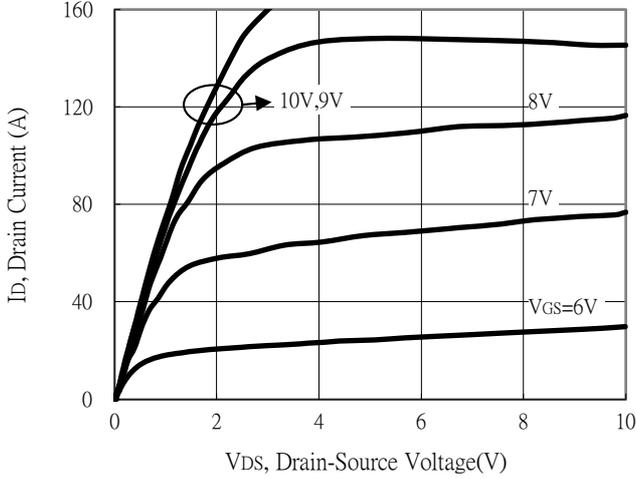
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	80	-	-	V	$V_{GS}=0V, I_D=250\mu A$
$V_{GS(th)}$	2	-	4		$V_{DS}=V_{GS}, I_D=250\mu A$
G_{FS}	-	11	-	S	$V_{DS}=10V, I_D=10A$
I_{GSS}	-	-	± 100	nA	$V_{GS}=\pm 20V, V_{DS}=0V$
I_{DSS}	-	-	1	μA	$V_{DS}=64V, V_{GS}=0V$
$R_{DS(ON)}$	-	9	12	m Ω	$V_{GS}=10V, I_D=10A$
Dynamic					
C_{iss}	-	1500	-	pF	$V_{DS}=40V, V_{GS}=0V, f=1MHz$
C_{oss}	-	240	-		
C_{rss}	-	30	-		
R_g	-	1.5	-	Ω	f=1MHz
Q_g *d,e	-	24	-	nC	$V_{DS}=40V, I_D=10A, V_{GS}=10V$
Q_{gs} *d,e	-	8	-		
Q_{gd} *d,e	-	5.4	-		
$t_{d(ON)}$ *d,e	-	19	-	ns	$V_{DS}=40V, I_D=10A, V_{GS}=10V, R_{GS}=1\Omega$
tr *d,e	-	17	-		
$t_{d(OFF)}$ *d,e	-	31	-		
t_f *d,e	-	8.4	-		
Source-Drain Diode					
V_{SD} *d	-	0.84	1.2	V	$I_S=10A, V_{GS}=0V$
t_{rr}	-	26	-	ns	$I_F=10A, di/dt=100A/\mu s$
Q_{rr}	-	24	-	nC	

Note:

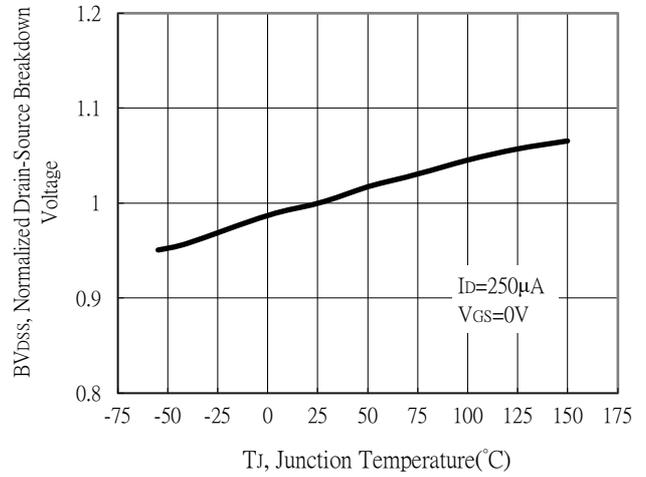
- *a. The power dissipation P_D is based on $T_{J(MAX)}=150^{\circ}\text{C}$, using junction-to-case thermal resistance, and is more useful in setting the upper Dissipation.
- *b. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The power dissipation P_D is based on $R_{\theta JA}$ and the maximum allowed junction temperature of 150°C . The value in any given application depends on the user's specific board design.
- *c. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}=150^{\circ}\text{C}$. Ratings are based on low frequency and low duty cycles to keep initial $T_J=25^{\circ}\text{C}$.
- *d. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
- *e. Independent of operating temperature.

Typical Characteristics

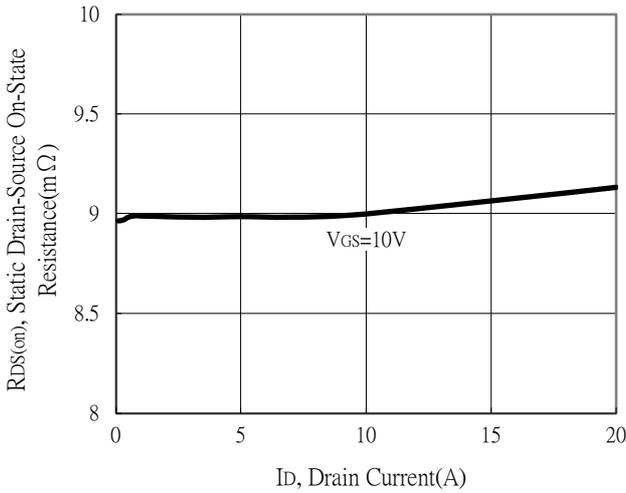
Typical Output Characteristics



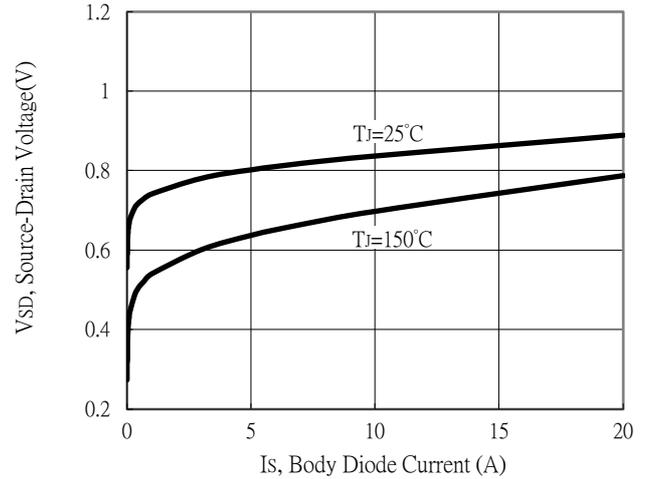
Breakdown Voltage vs Ambient Temperature



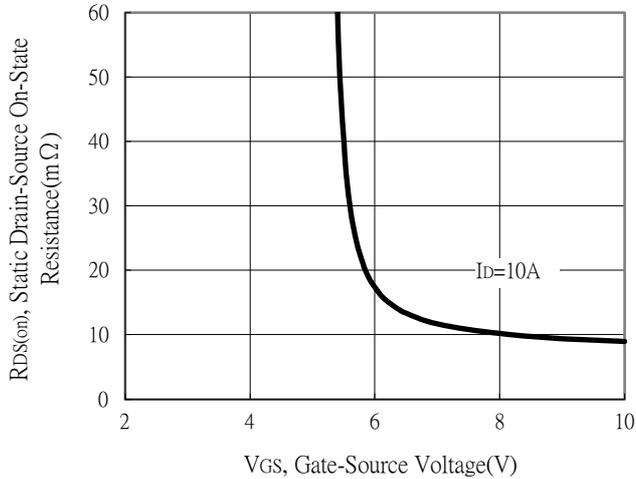
Static Drain-Source On-State resistance vs Drain Current



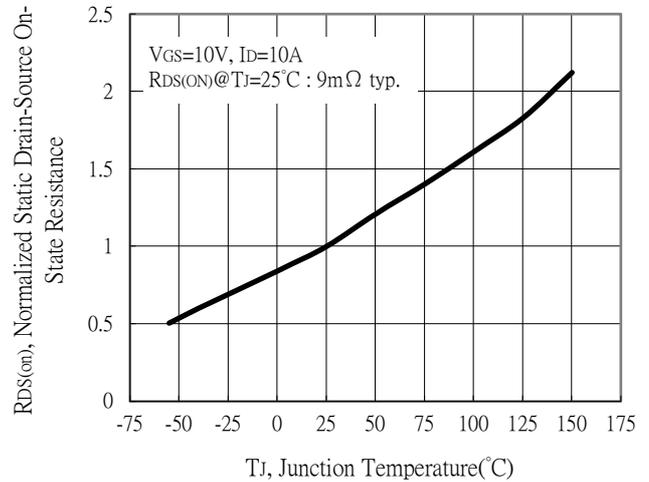
Body Diode Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

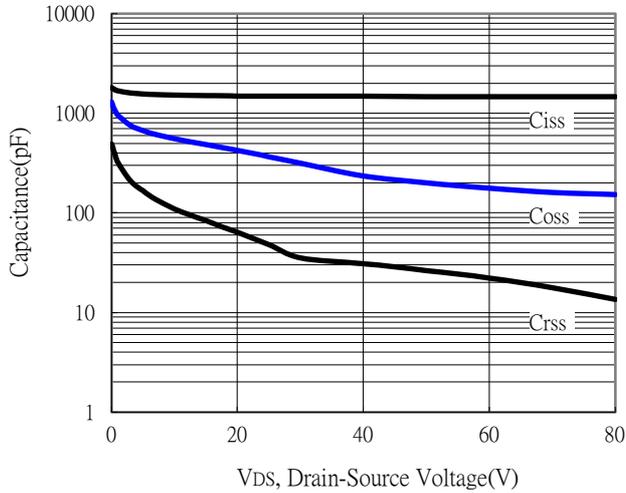


Drain-Source On-State Resistance vs Junction Temperature

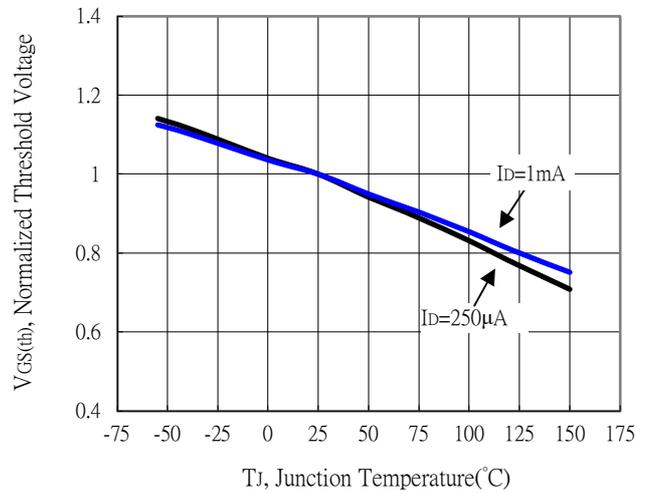


Typical Characteristics

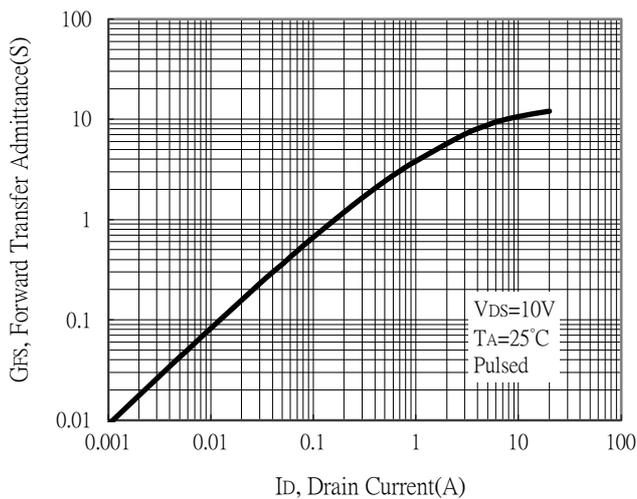
Capacitance vs Drain-to-Source Voltage



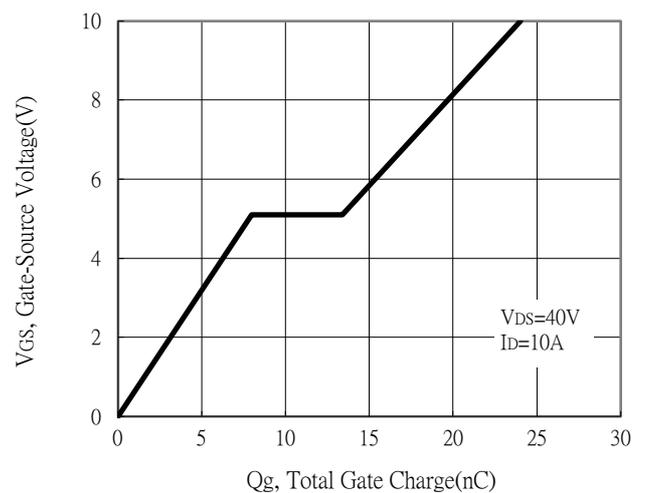
Threshold Voltage vs Junction Temperature



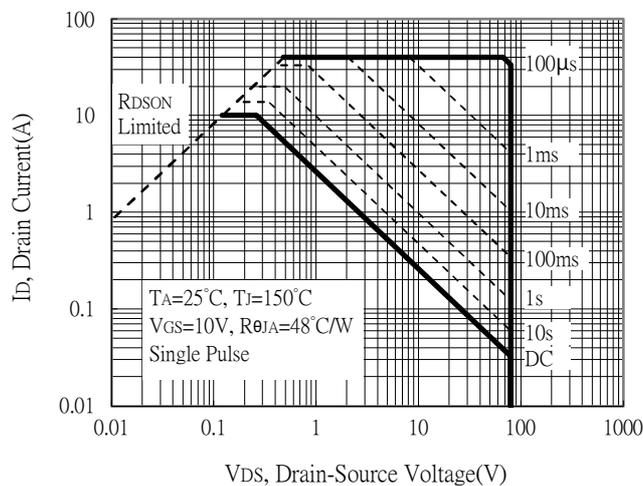
Forward Transfer Admittance vs Drain Current



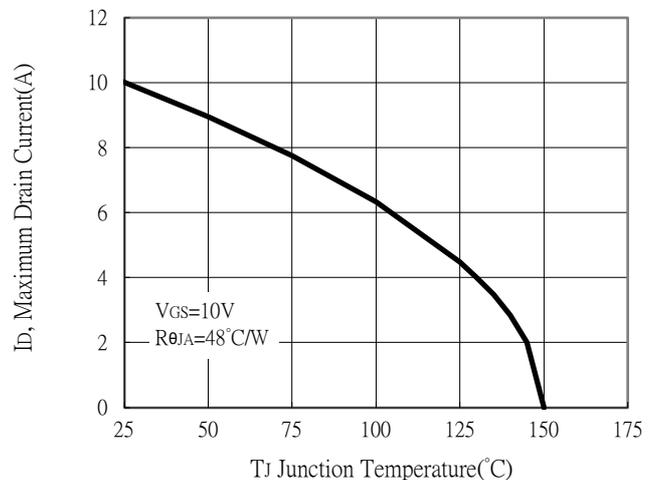
Gate Charge Characteristics



Maximum Safe Operating Area

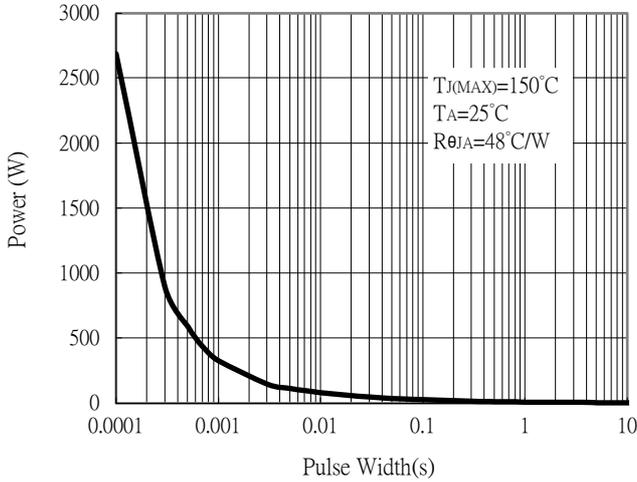


Maximum Drain Current vs Junction Temperature

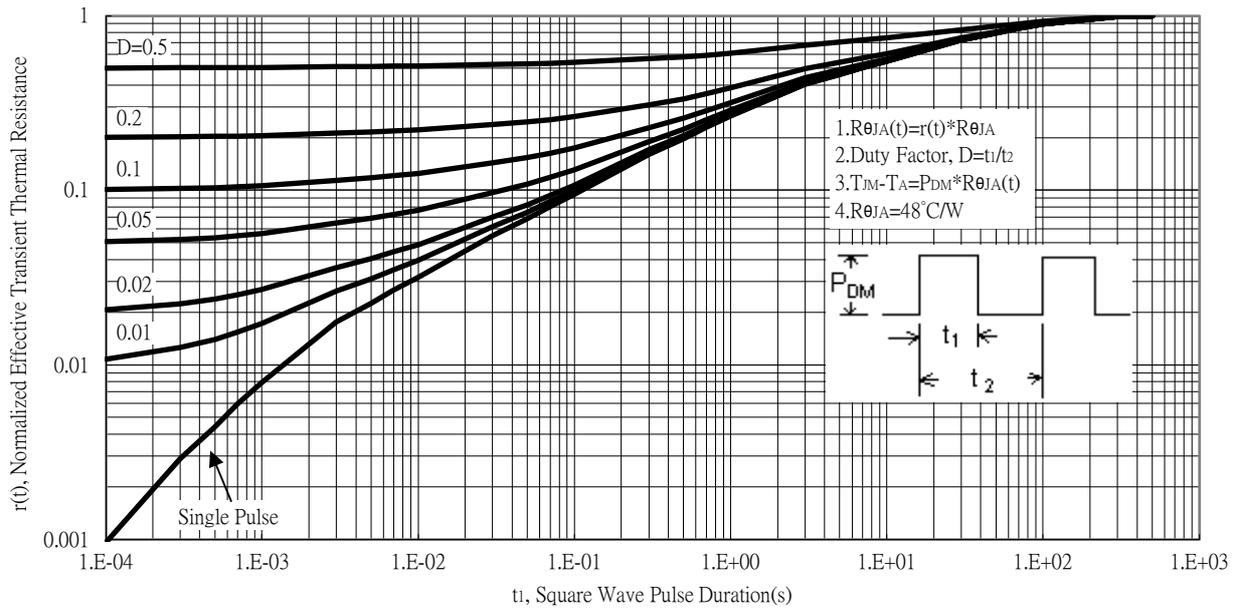


Typical Characteristics

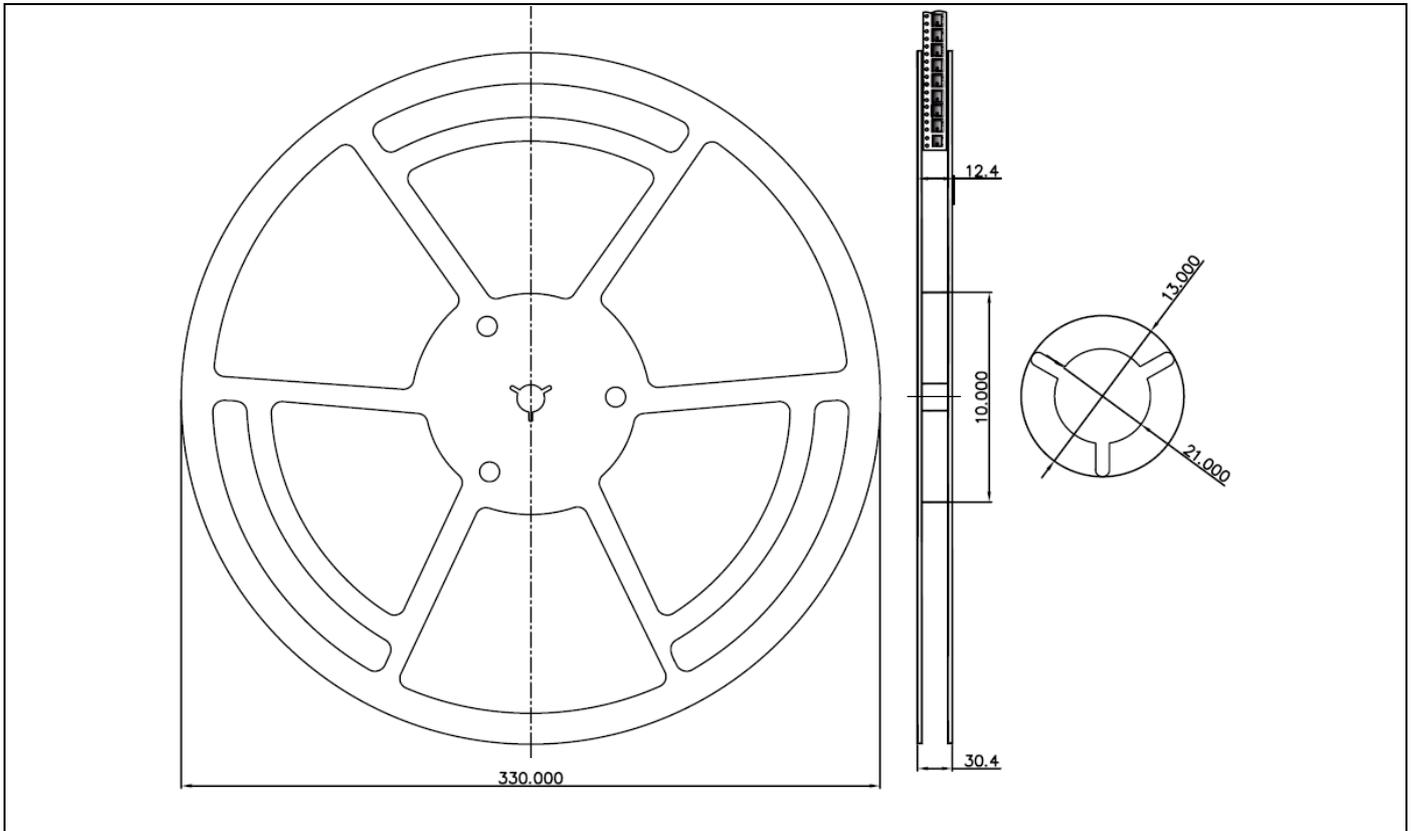
Single Pulse Power Rating, Junction to Ambient



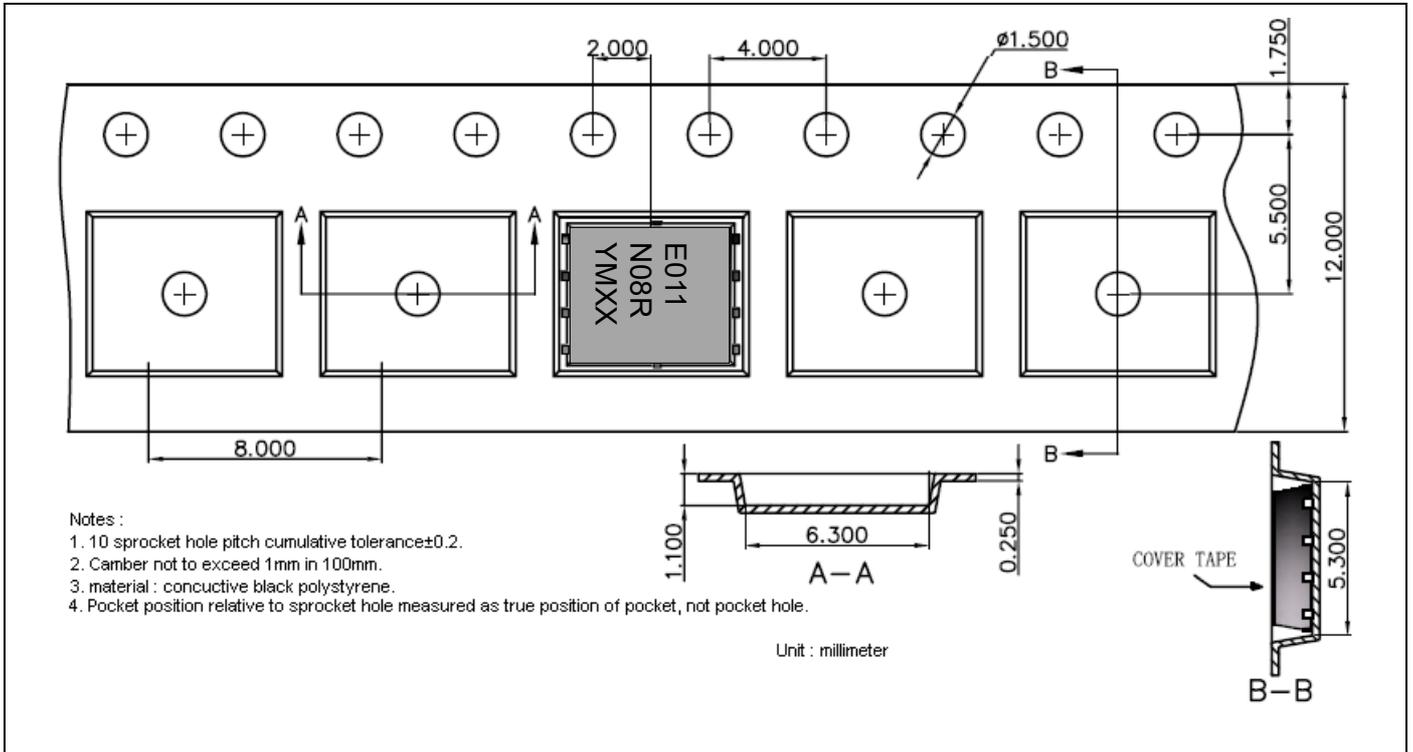
Transient Thermal Response Curves



Reel Dimension



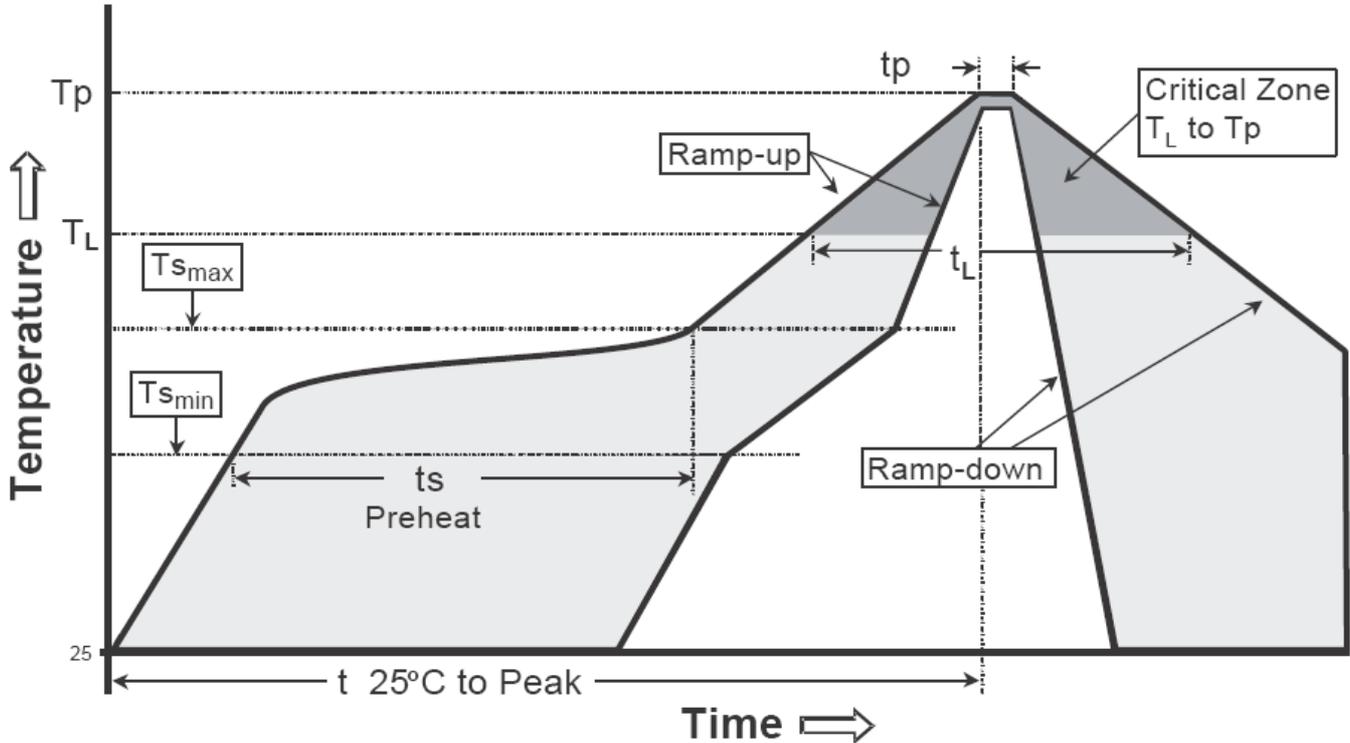
Carrier Tape Dimension



Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (TS max to TP)	3°C/second max.	3°C/second max.
Preheat -Temperature Min (TS min) -Temperature Max (TS max) -Time (ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) -Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature (TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature (tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note:

- All temperatures refer to topside of the package, measured on the package body surface.