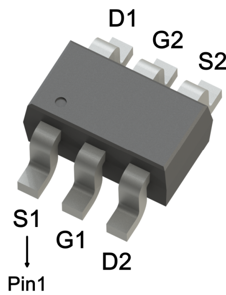
Product Summary

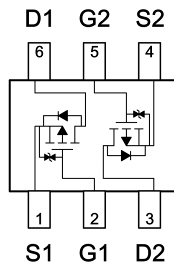
BV_{DSS}	-60	V
$R_{DS(ON)}$ typ. @ V_{GS}=-10V, I_D=-0.2A	3	Ω
$R_{DS(ON)}$ typ. @ V_{GS}=-4.5V, I_D=-0.1A	3.3	
I_D @ V_{GS}=-10V, T_A=25°C	-0.24	A

Features

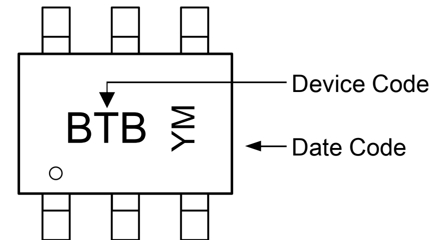
- Low Gate Charge
- Fast Switching Characteristic
- Pb-free lead plating and halogen-free
- ESD protected gate, typical 3kV (HBM)

SOT-363





Marking



YM: 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

Ordering Information

Device	Package	Shipping
MTB3K0B06KS6R-0-T1-G	SOT-363	3000pcs / Tape & Reel

0: Product rank, zero for no rank products.
T1: Packing spec, T1 : 3000pcs / tape & reel, 7" reel
G: Environment friendly grade: S for RoHS compliant products, G for RoHS compliant and green compound products.

Absolute Maximum Ratings (T_A=25°C)

Parameter			Symbol	Value	Unit
Drain-Source Voltage			V_{DS}	-60	V
Gate-Source Voltage			V_{GS}	±20	
Continuous Drain Current @ V_{GS}=-10V, T_A=25°C		*a	I_D	-0.24	A
Continuous Drain Current @ V_{GS}=-10V, T_A=70°C		*a		-0.19	
Pulsed Drain Current		*b	I_{DM}	-0.96	
Continuous Body Diode Forward Current @ T_A=25°C		*a	I_S	-0.24	
Pulsed Body Diode Forward Current @ T_A=25°C		*a	I_{SM}	-0.96	
Total Power Dissipation	T_A=25°C	*a	P_D	0.5	W
	T_A=70°C	*a		0.3	
Operating Junction and Storage Temperature Range			T_J, T_{stg}	-55~+150	°C
Steady State Thermal Resistance, Junction-to-Ambient		*a	$R_{θJA}$	266	°C/W

Electrical Characteristics (T_A=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	-60	-	-	V	V_{GS}=0V, I_D=-250μA
$V_{GS(th)}$	-1	-	-2.5		V_{DS}=V_{GS}, I_D=-250μA
G_{FS}	-	0.34	-	S	V_{DS}=-10V, I_D=-0.1A
I_{GSS}	-	-	±10	μA	V_{GS}=±16V, V_{DS}=0V
I_{DSS}	-	-	-1		V_{DS}=-48V, V_{GS}=0V
$R_{DS(ON)}$	-	3	4.4	Ω	V_{GS}=-10V, I_D=-0.2A
	-	3.3	5		V_{GS}=-4.5V, I_D=-0.1A
Dynamic					
Q_g *c,d	-	0.7	-	nC	V_{DS}=-30V, I_D=-0.2A, V_{GS}=-4.5V
Q_g *c,d	-	1.5	-		V_{DS}=-30V, I_D=-0.2A, V_{GS}=-10V
Q_{gs} *c,d	-	0.4	-		
Q_{gd} *c,d	-	0.1	-		
$t_{d(ON)}$ *c,d	-	6.3	-	ns	V_{DS}=-30V, I_D=-0.2A, V_{GS}=-10V, R_{GS}=6Ω
tr *c,d	-	15	-		
$t_{d(OFF)}$ *c,d	-	27	-		
t_f *c,d	-	21	-		
Source-Drain Diode					
V_{SD} *d	-	-0.86	-1.2	V	I_S=-0.2A, V_{GS}=0V
t_{rr}	-	11	-	ns	I_F=-0.2A, di/dt=100A/μs
Q_{rr}	-	4	-	nC	

Note:

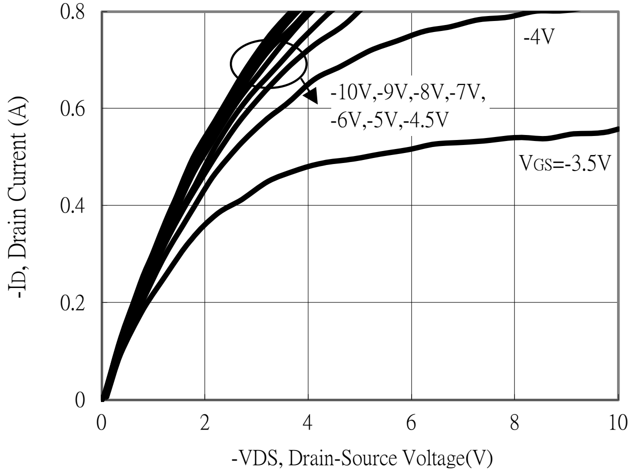
*a. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz copper, in a still air environment with T_A=25°C. The power dissipation P_D is based on $R_{\theta JA}$ and the maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.

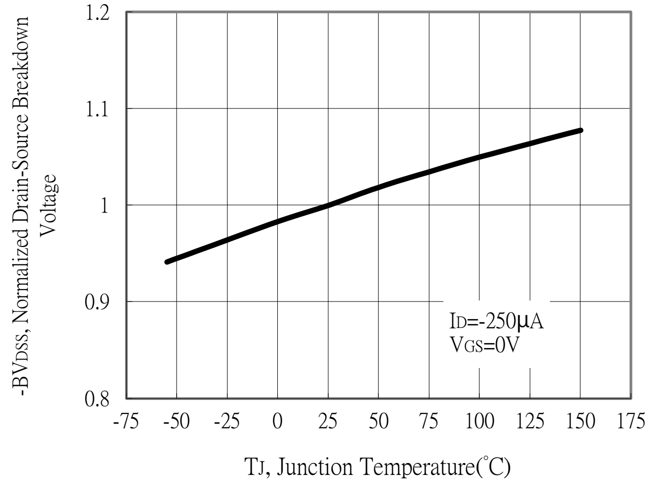
*b. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C. Ratings are based on low frequency and low duty cycles to keep initial T_J=25°C.

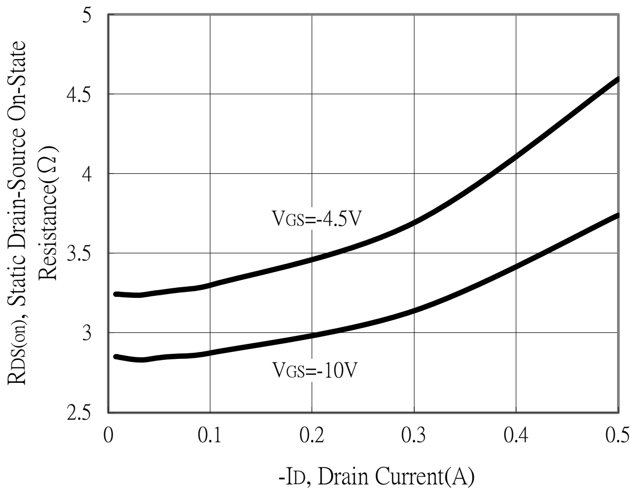
*c. Pulse Test : Pulse Width≤300μs, Duty Cycle≤2%.

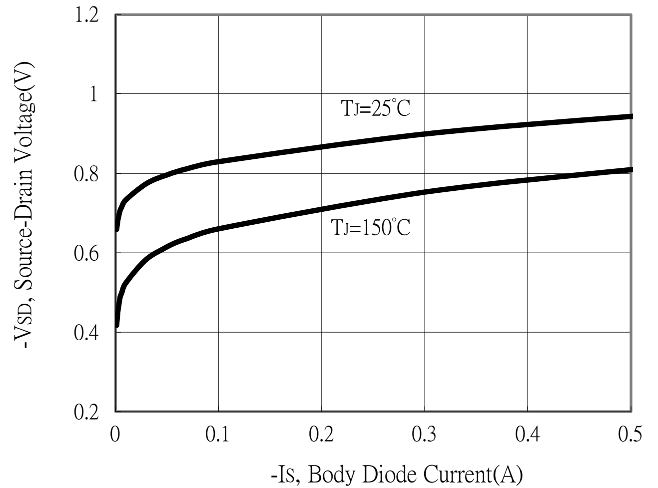
*d. Independent of operating temperature.

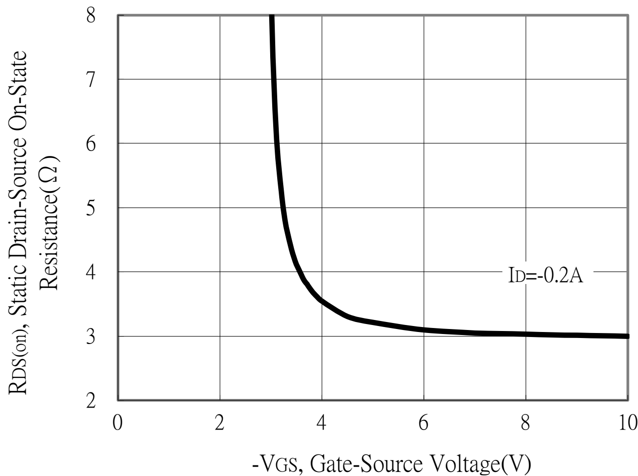
Typical Characteristics

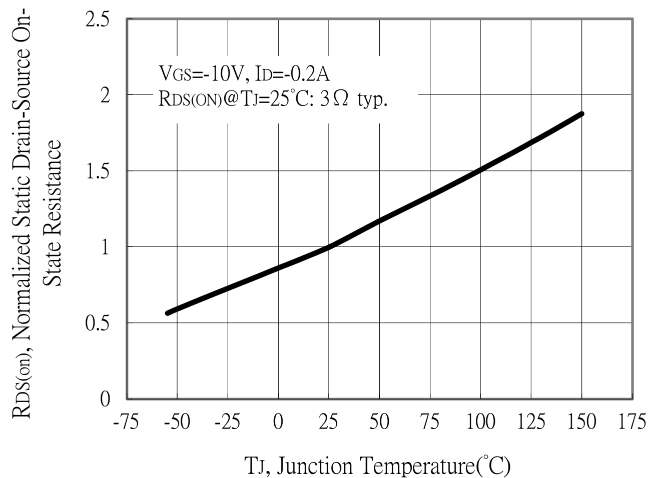




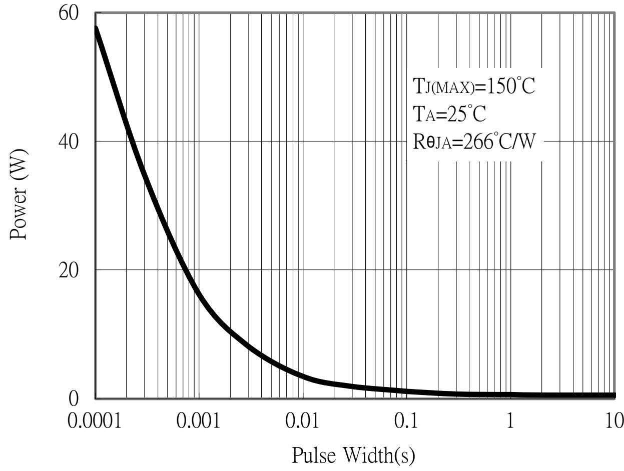


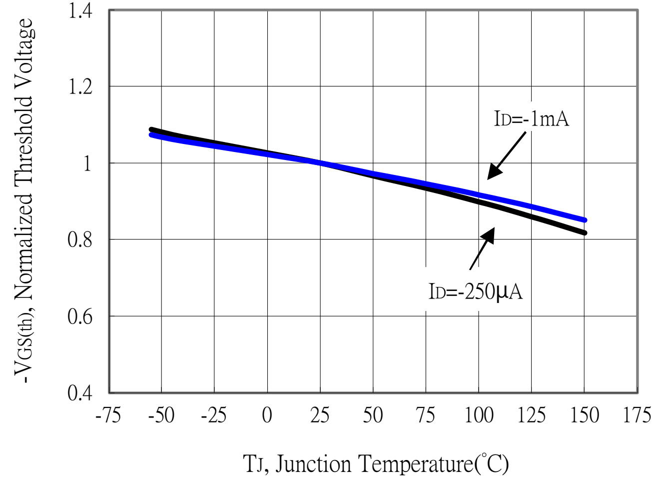


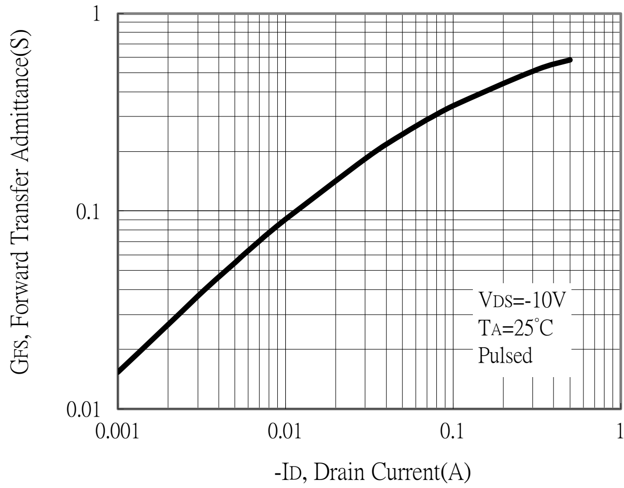


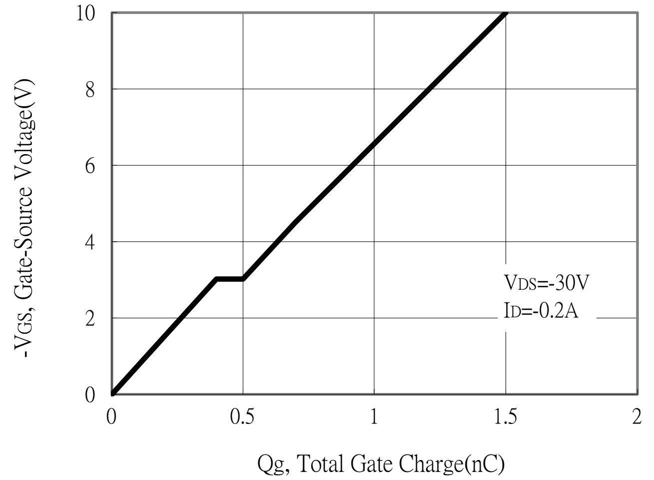


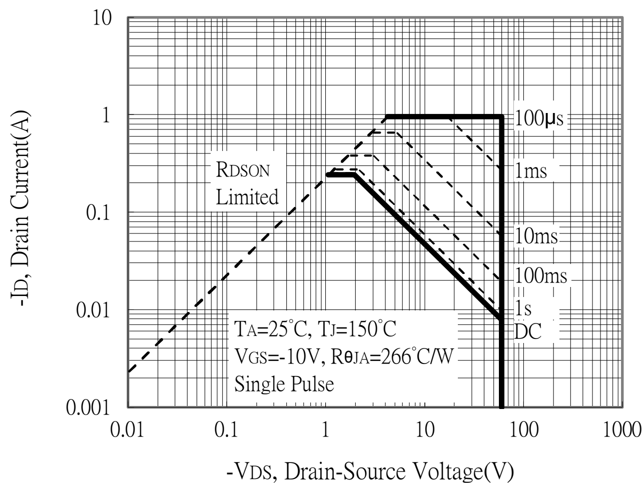
Typical Characteristics

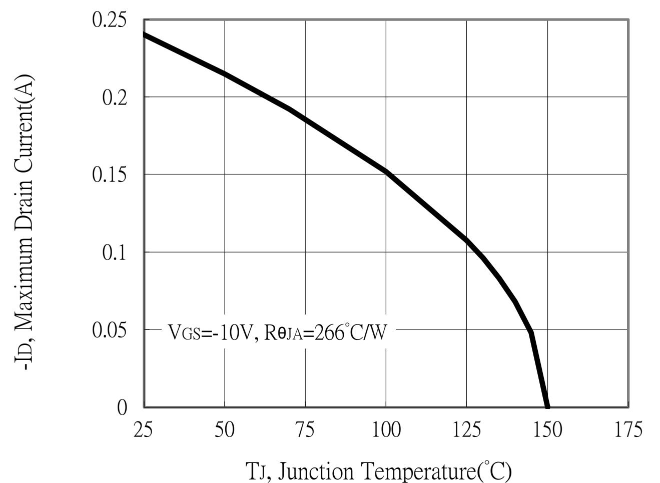




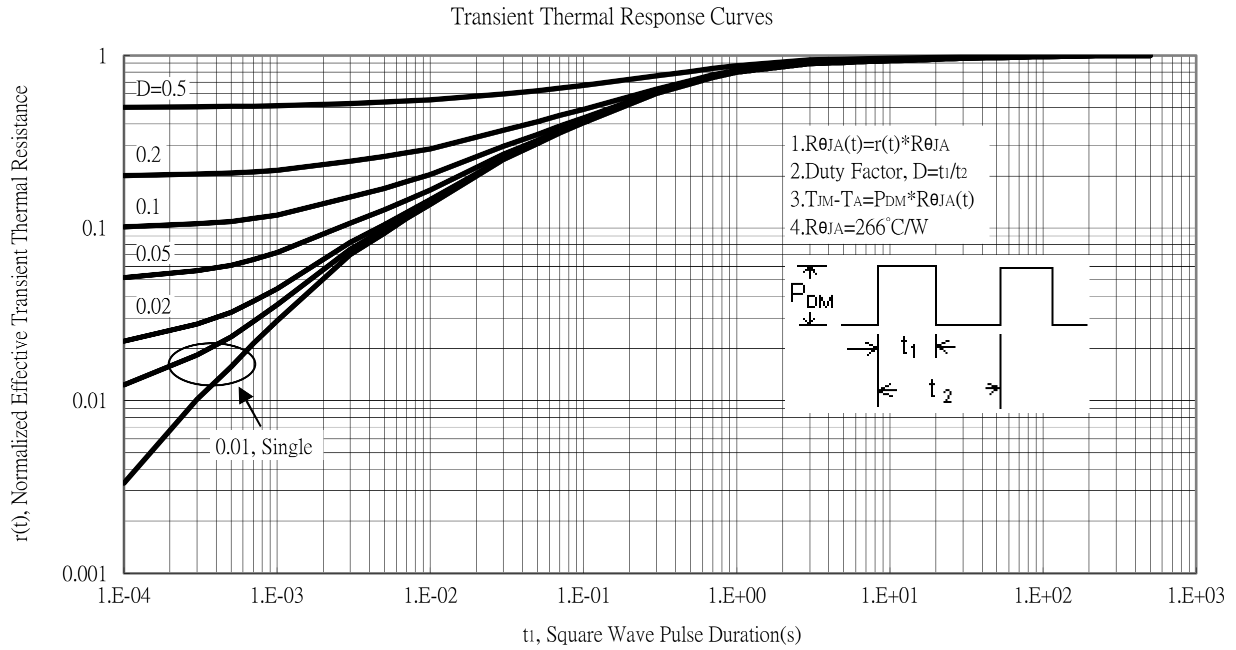




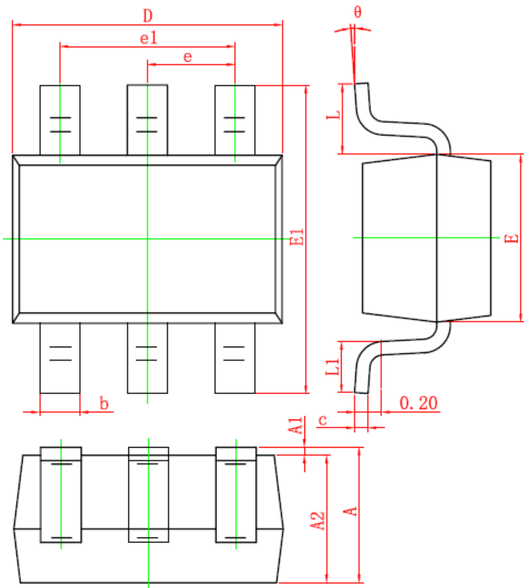




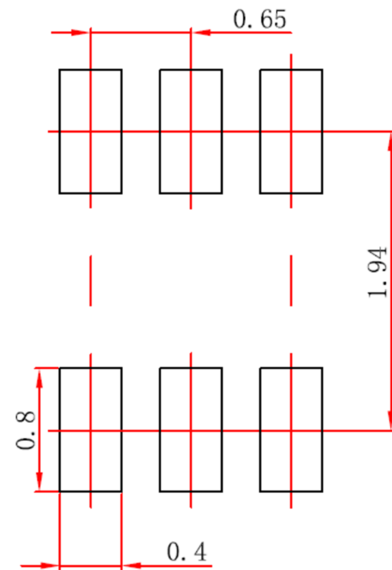
Typical Characteristics



SOT-363 Dimension



6-Lead SOT-363 Plastic Surface Mount Package
CYS Package Code: S6R



Recommended Soldering Footprint

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.035	0.043	0.900	1.100	E1	0.085	0.096	2.150	2.450
A1	0.000	0.004	0.000	0.100	e	0.026	TYP.	0.650	TYP.
A2	0.035	0.039	0.900	1.000	e1	0.047	0.055	1.200	1.400
b	0.006	0.014	0.150	0.350	L	0.021	REF.	0.525	REF.
c	0.003	0.006	0.080	0.150	L1	0.010	0.018	0.260	0.460
D	0.079	0.087	2.000	2.200	θ	0°	8°	0°	8°
E	0.045	0.053	1.150	1.350					

Note:
- Controlling dimension: millimeters.
- Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
- If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:
- Lead: pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.

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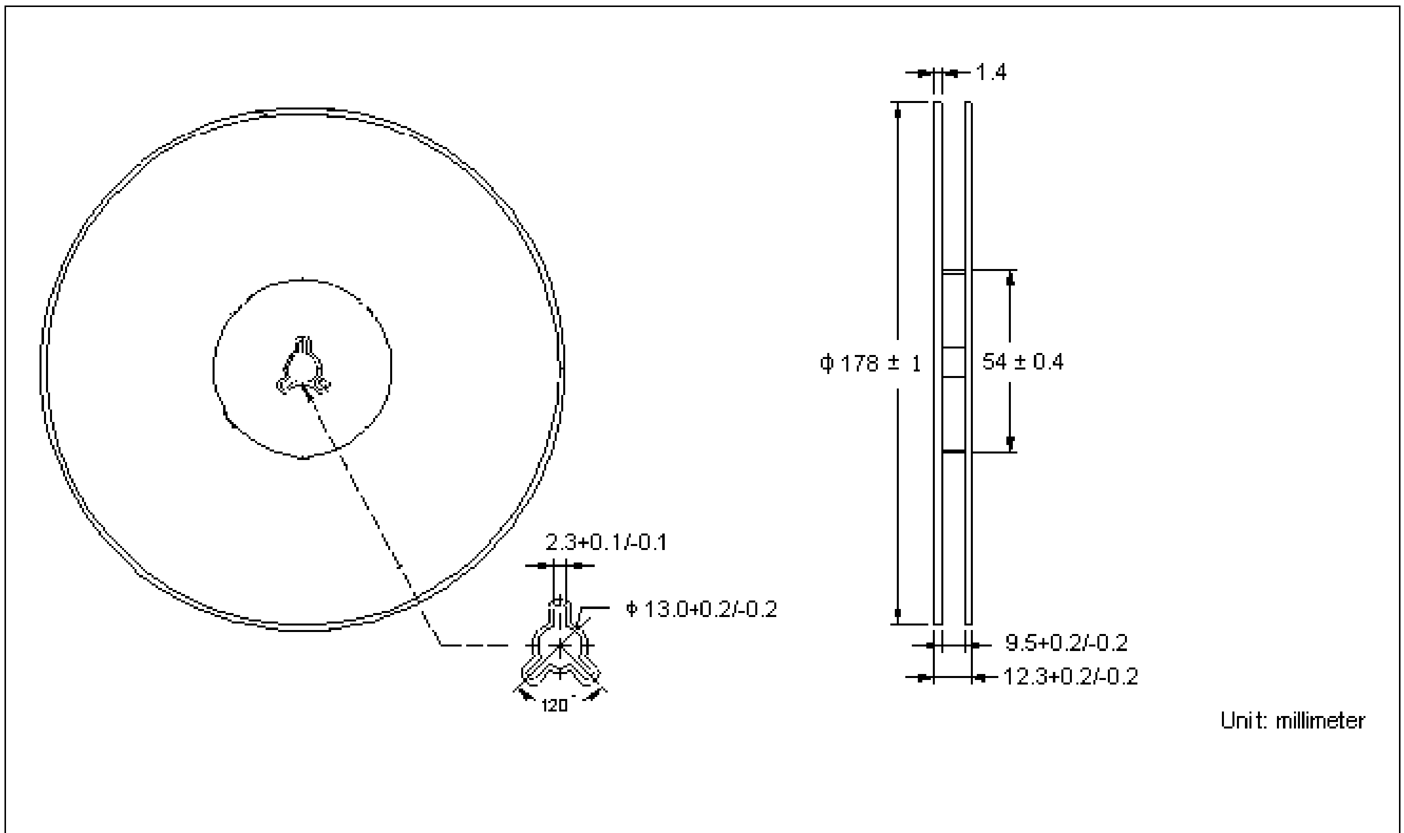
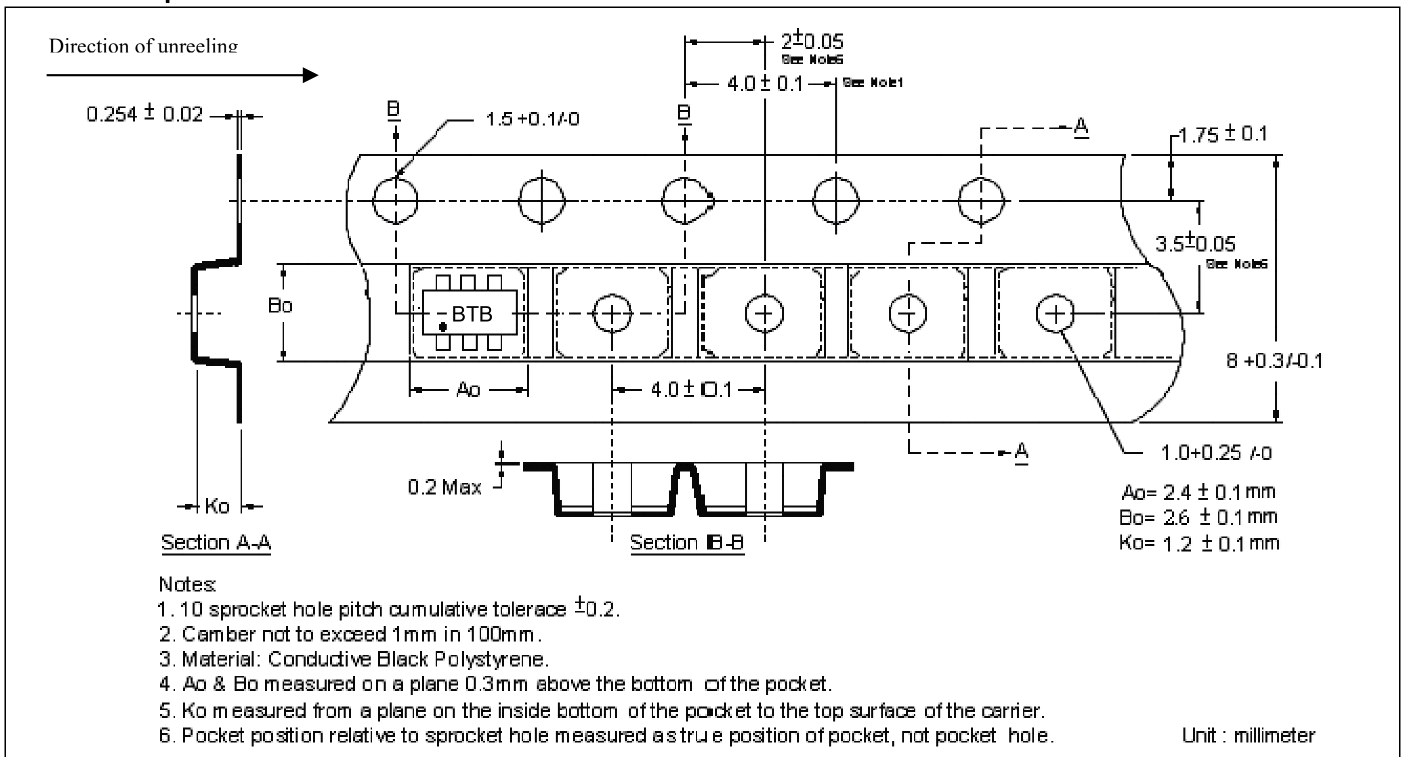
Reel Dimension



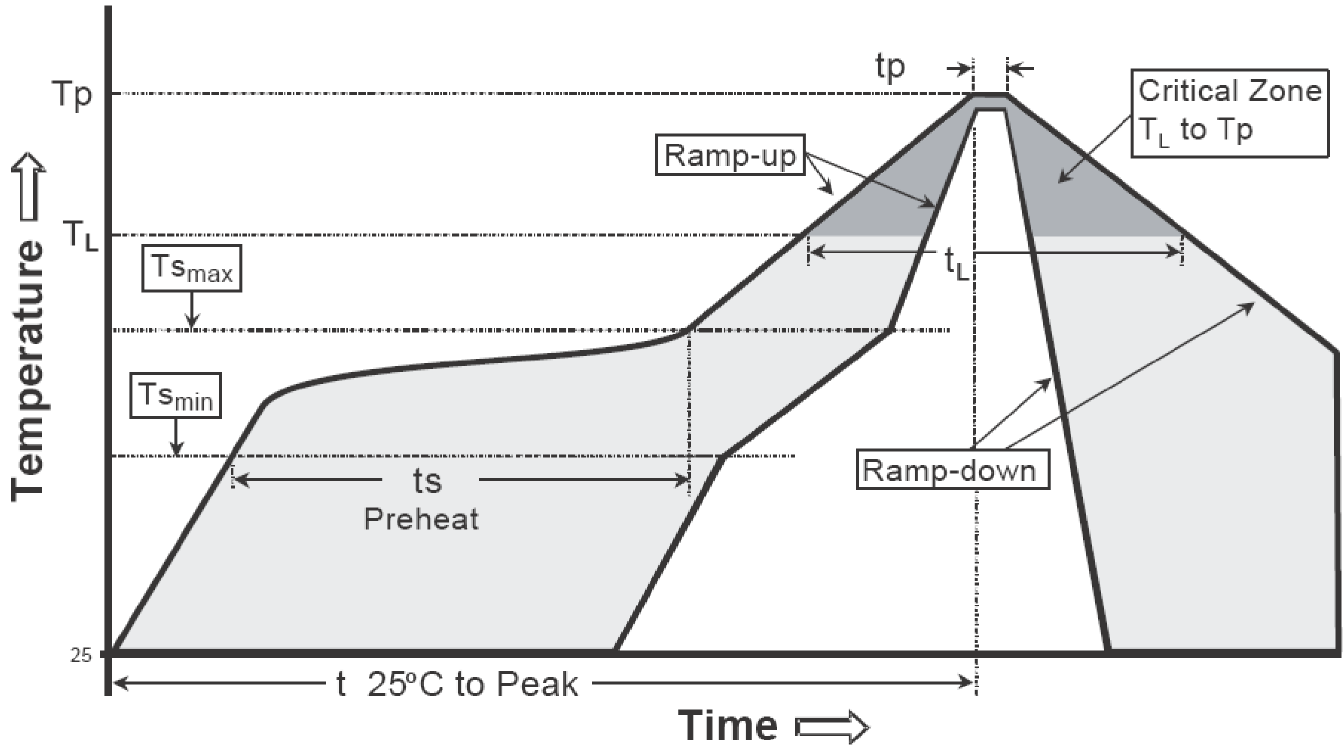
Carrier Tape Dimension



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 (T_S max to T_P)	3°C/second max.	3°C/second max.
Preheat −Temperature Min (T_S min) −Temperature Max (T_S max) −Time (t_S min to t_S max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: −Temperature (T_L) −Time (t_L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature (T_P)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature (t_P)	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.