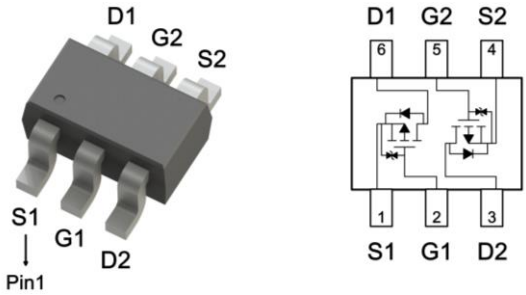
Product Summary

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

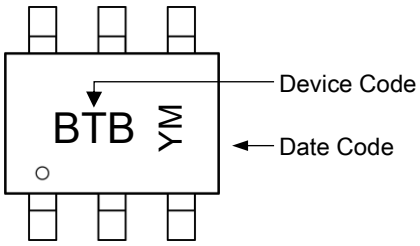
Features

- 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

1: Jan	2: Feb	3: Mar	4: Apr	5: May	6: Jun
7: Jul	8: Aug	9: Sep	A: Oct	B: Nov	C: 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	$R_{\theta JA}$	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					
C_{iss}	-	35	-	pF	V_{DS}=-30V, V_{GS}=0V, f=1MHz
C_{oss}	-	9	-		
C_{rss}	-	7	-		
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.

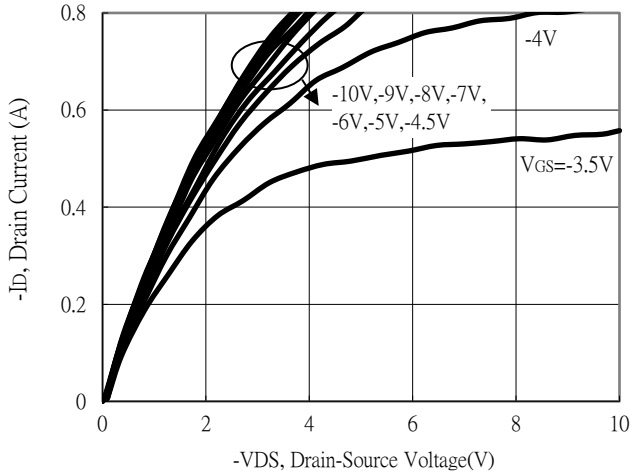
*b. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C. Ratings are based on low frequency and low duty cycles to keep initial T_J=25°C.

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

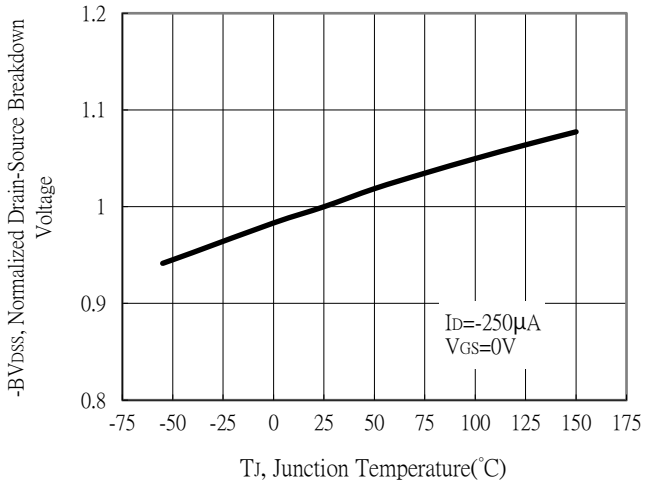
*d. Independent of operating temperature.

Typical Characteristics

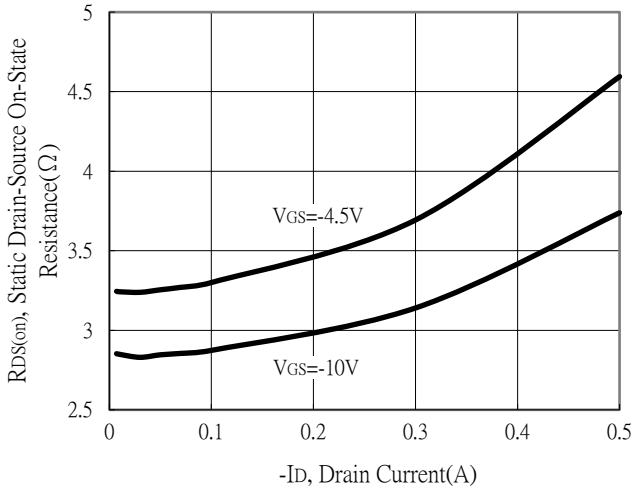
Typical Output Characteristics



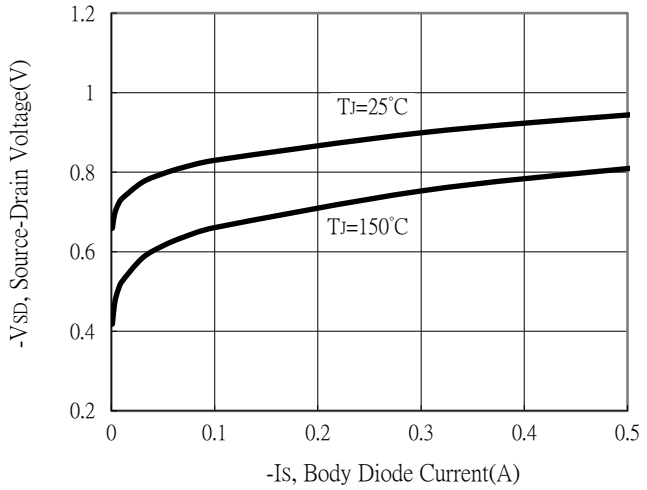
Breakdown Voltage vs Junction Temperature



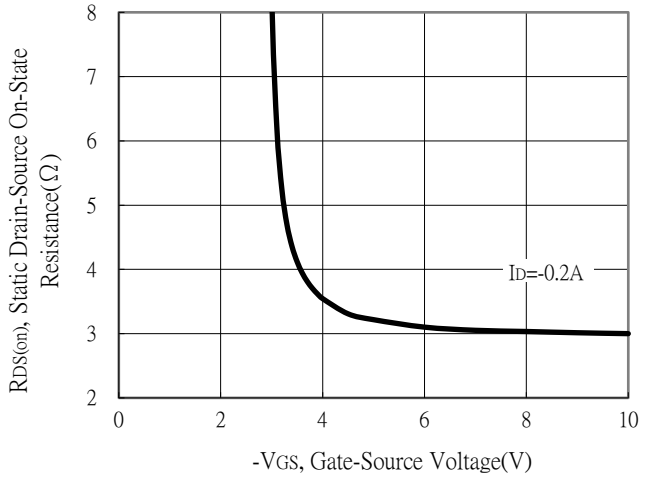
Static Drain-Source On-State resistance vs Drain Current



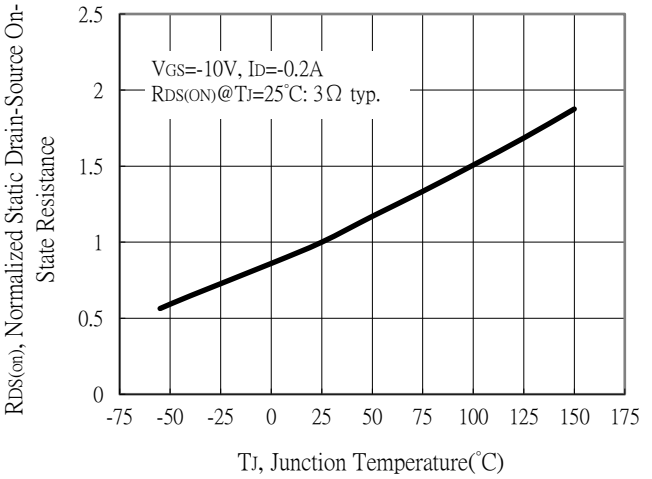
Body Diode Current vs Source-Drain Voltage



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

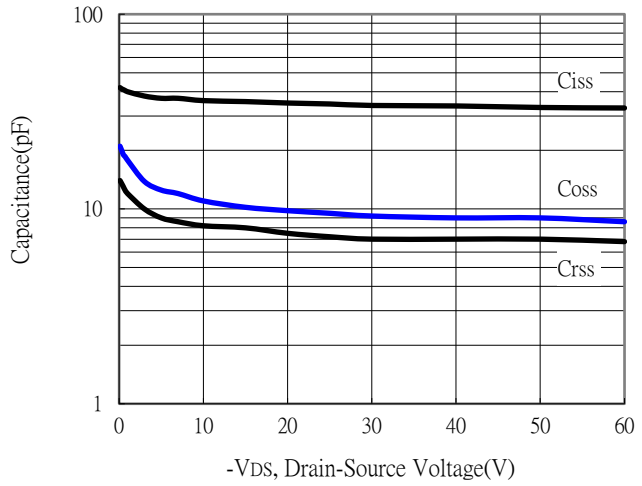


Drain-Source On-State Resistance vs Junction Temperature

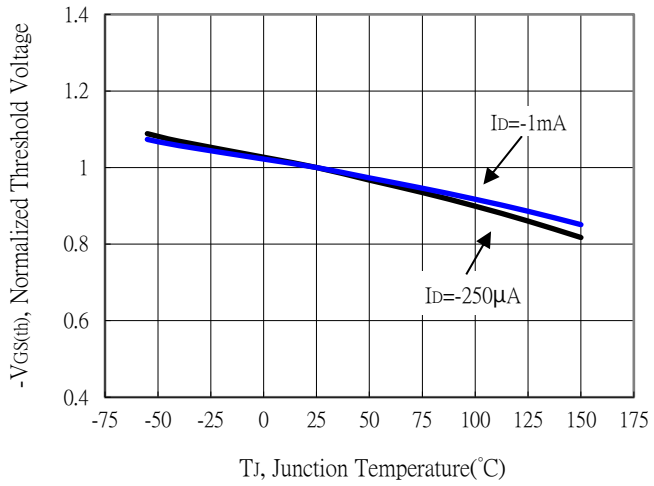


Typical Characteristics

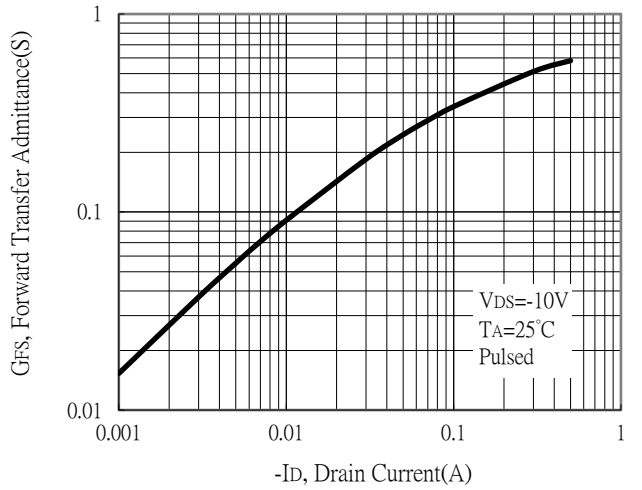
Capacitance vs Drain-to-Source Voltage



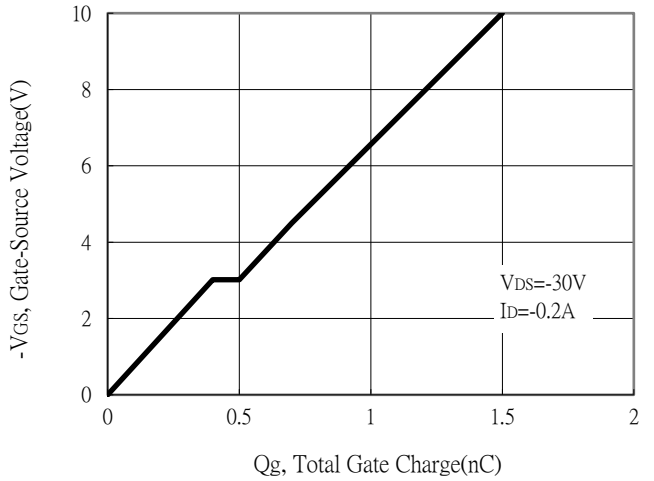
Threshold Voltage vs Junction Temperature



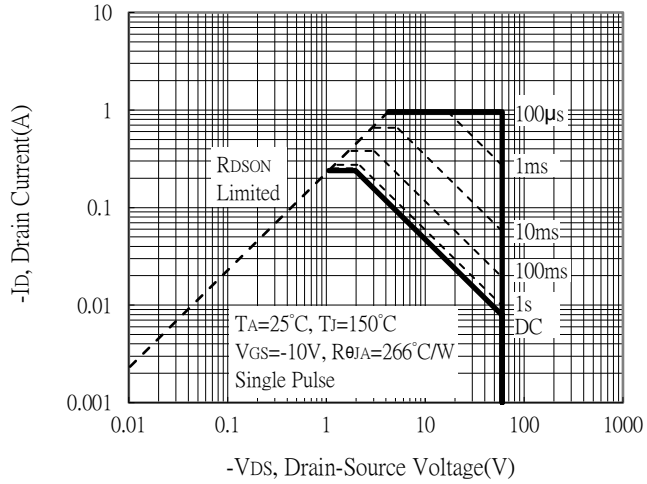
Forward Transfer Admittance vs Drain Current



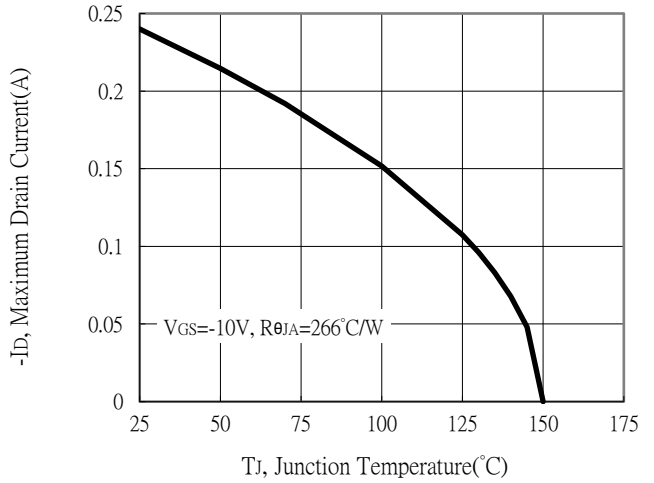
Gate Charge Characteristics



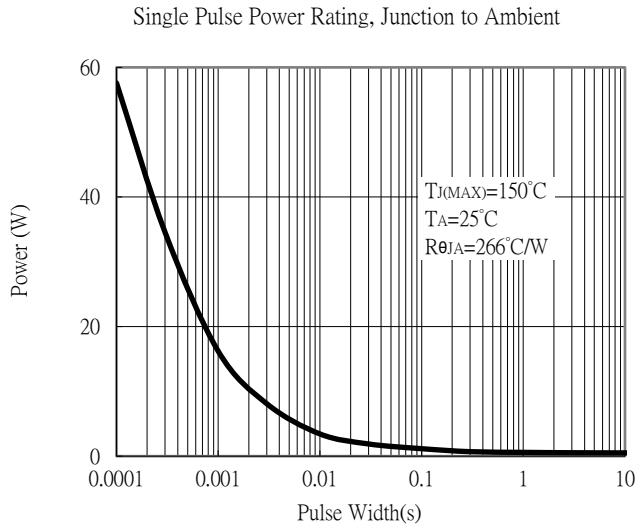
Maximum Safe Operating Area

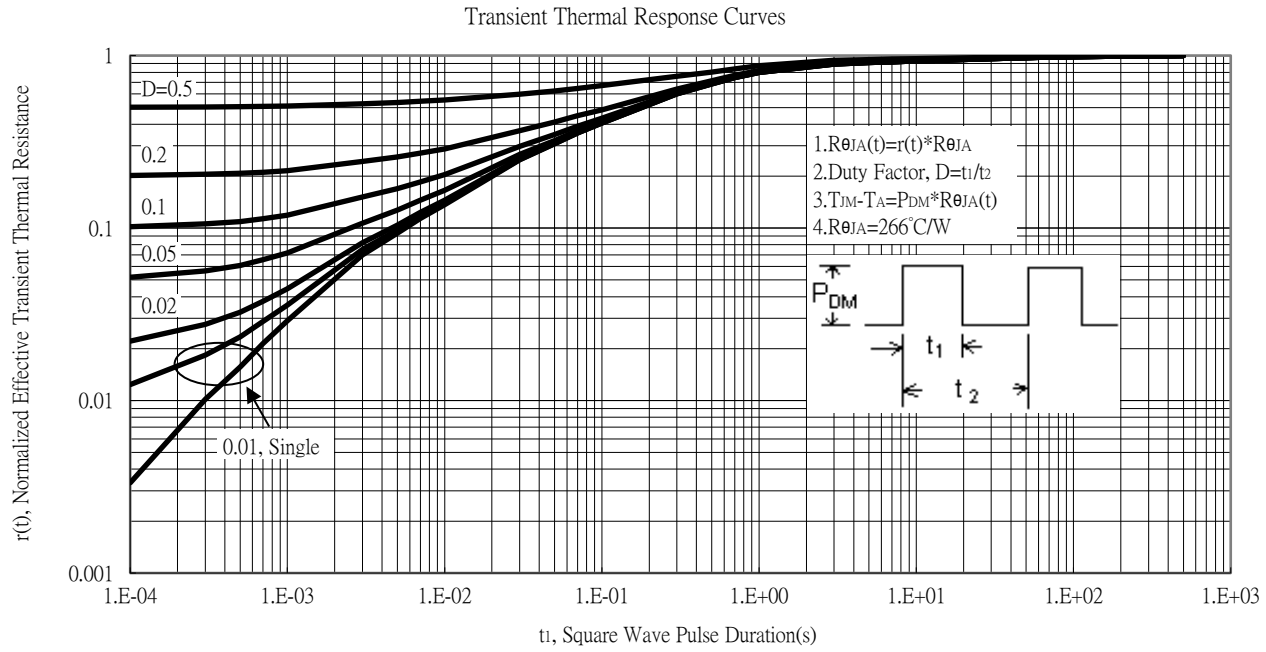


Maximum Drain Current vs Junction Temperature

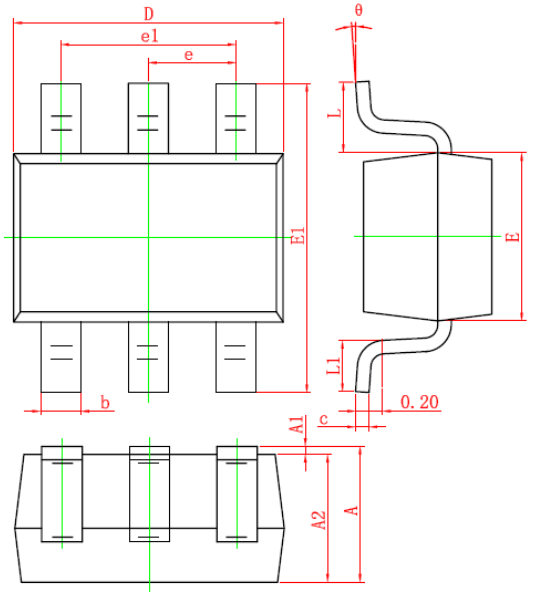


Typical Characteristics

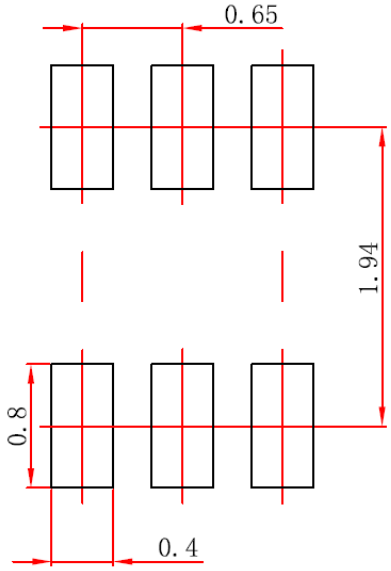




SOT-363 Dimension



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



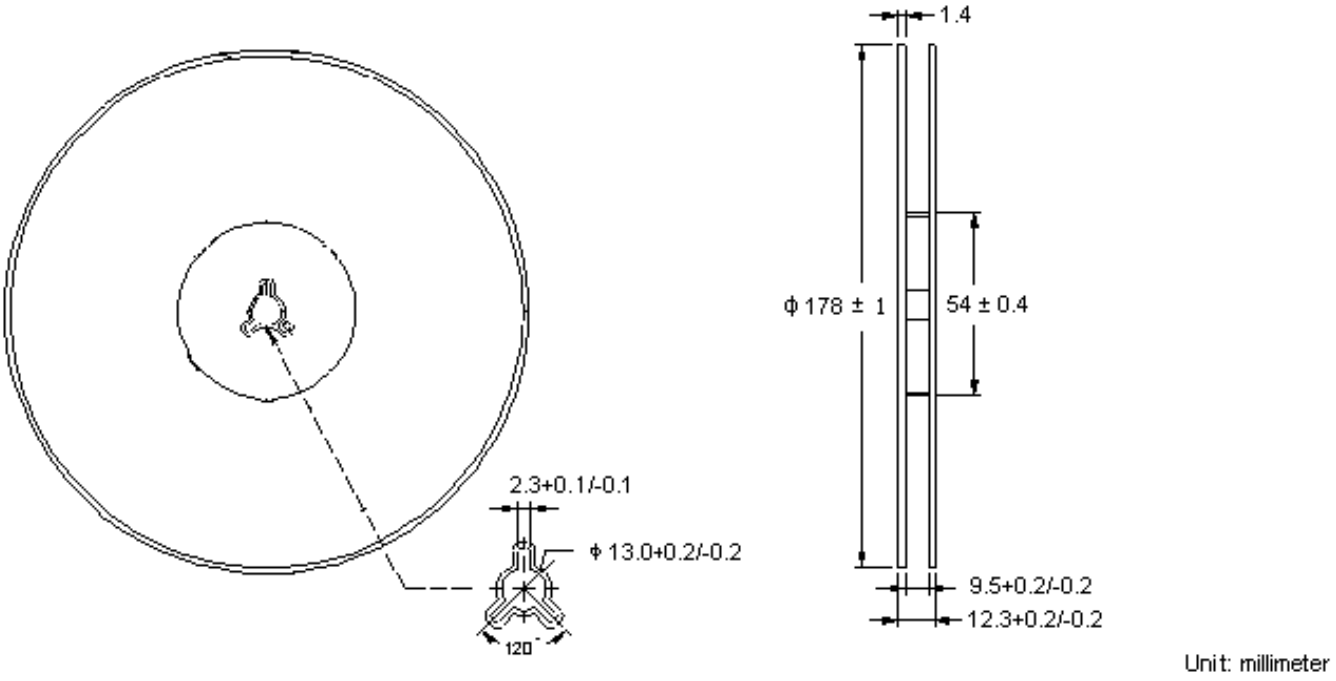
Recommended Soldering Footprint

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					

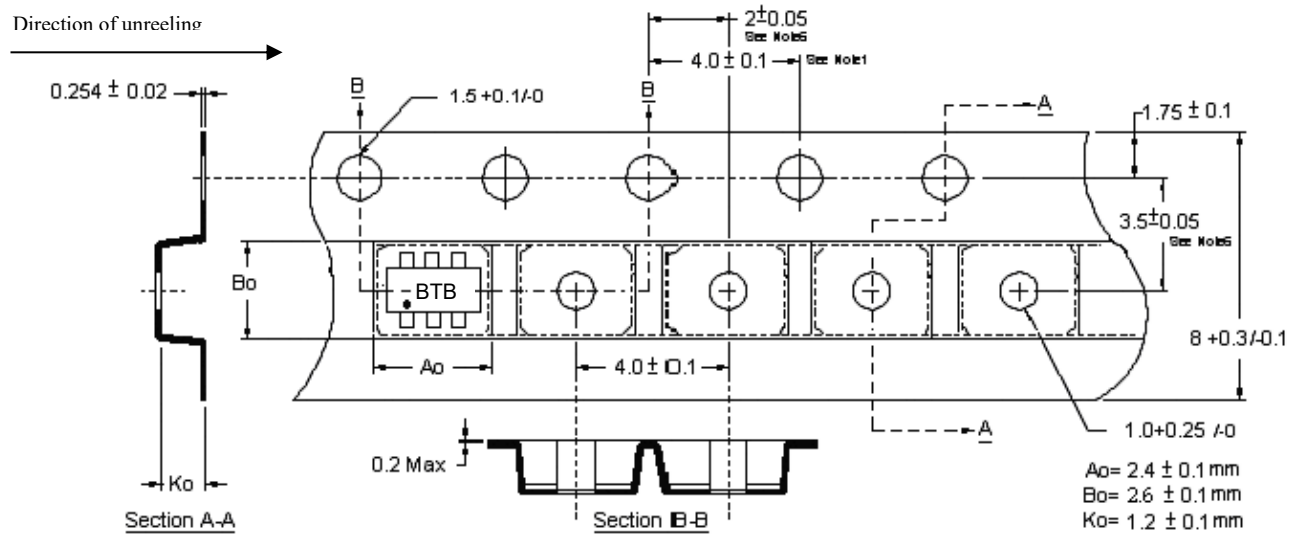
Note:
- Controlling dimension: millimeters.
- Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
- If there is any question with packing specification or packing method, please contact your local CYStek sales office.

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

Reel Dimension



Carrier Tape Dimension



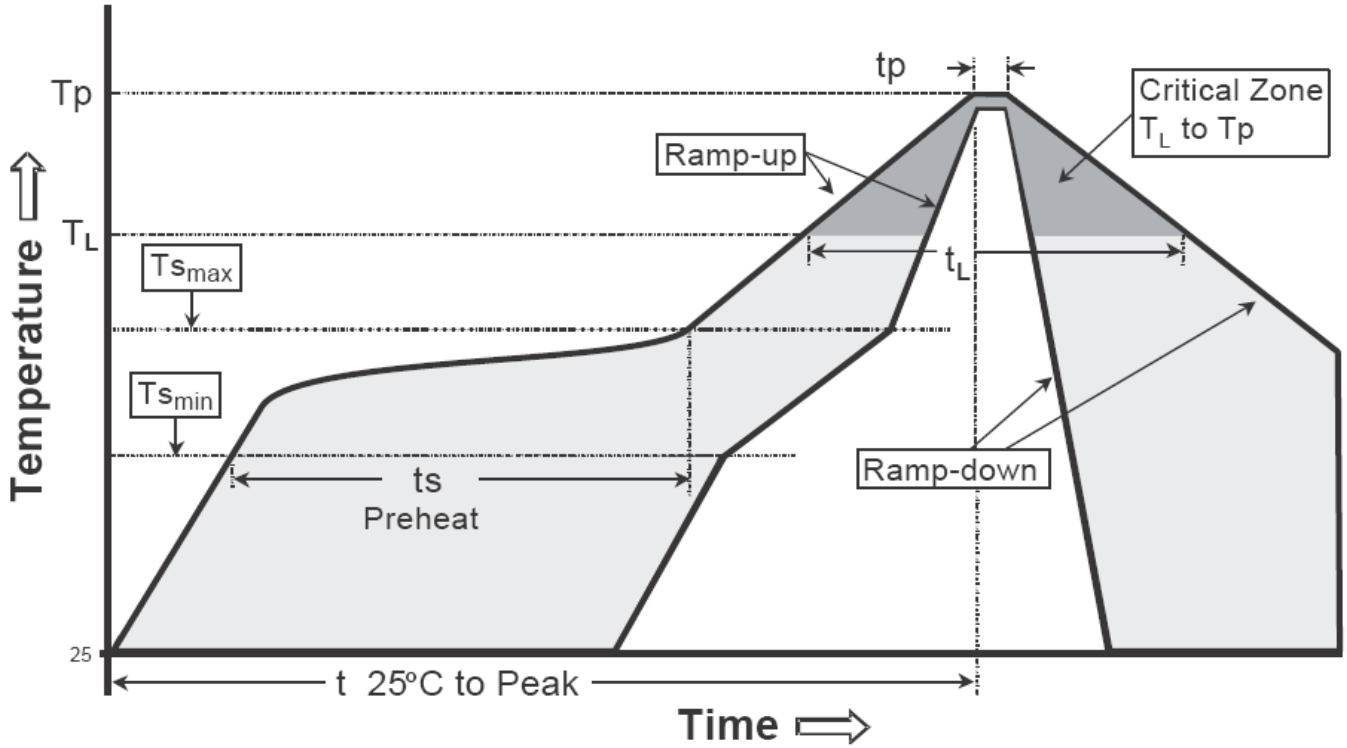
Notes:
1. 10 sprocket hole pitch cumulative tolerace ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

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.