

Dual N-Channel Enhancement Mode Power MOSFET

Features

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

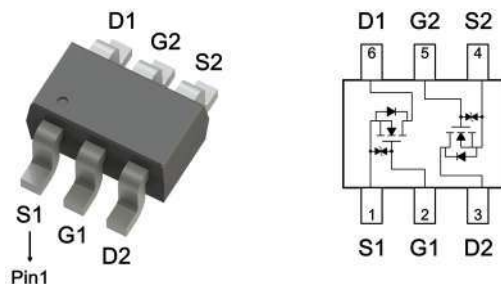
Product Summary

BV_{DSS}	30	V
$R_{DS(ON)}$ typ. @ $V_{GS}=10V$, $I_D=0.2A$	1.5	Ω
$R_{DS(ON)}$ typ. @ $V_{GS}=4.5V$, $I_D=0.2A$	2	
I_D @ $V_{GS}=10V$, $T_A=25^\circ C$	0.36	A

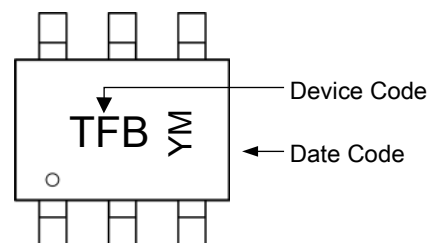
Ordering Information

Device	Package	Shipping
KWB2K0A03K	SOT-363	3000pcs / Tape & Reel

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

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current @ $V_{GS}=10V$, $T_A=25^\circ C$	I_D	0.36	A
Continuous Drain Current @ $V_{GS}=10V$, $T_A=70^\circ C$		0.29	
Pulsed Drain Current	I_{DM}	0.7	
Continuous Body Diode Forward Current @ $T_A=25^\circ C$	I_S	0.36	
Pulsed Body Diode Forward Current @ $T_A=25^\circ C$	I_{SM}	0.7	
Total Power Dissipation	P_D	0.48	W
		0.31	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	$^\circ C$
Steady State Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	260	$^\circ C/W$

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

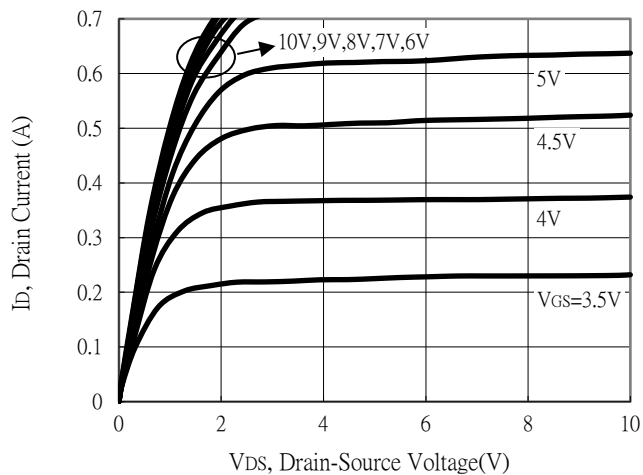
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	30	-	-	V	V _{GS} =0V, I _D =250μA
V _{GS(th)}	1	-	2.5		V _{DS} =V _{GS} , I _D =250μA
G _{FS}	-	0.2	-	S	V _{DS} =10V, I _D =0.2A
I _{GSS}	-	-	±10	μA	V _{GS} =±16V, V _{DS} =0V
I _{DSS}	-	-	1		V _{DS} =24V, V _{GS} =0V
R _{DS(ON)}	-	1.5	2	Ω	V _{GS} =10V, I _D =0.2A
	-	2	3.1		V _{GS} =4.5V, I _D =0.2A
Dynamic					
C _{iss}	-	11.5	-	pF	V _{DS} =15V, V _{GS} =0V, f=1MHz
C _{oss}	-	8	-		
C _{rss}	-	6.3	-		
Q _g *c,d	-	0.6	-	nC	V _{DS} =20V, I _D =0.2A, V _{GS} =4.5V
Q _g *c,d	-	1.2	-		V _{DS} =20V, I _D =0.2A, V _{GS} =10V
Q _{gs} *c,d	-	0.37	-		
Q _{gd} *c,d	-	0.1	-		
t _{d(ON)} *c,d	-	2.5	-	ns	V _{DS} =15V, I _D =0.2A, V _{GS} =10V, R _{GS} =1Ω
tr *c,d	-	14	-		
t _{d(OFF)} *c,d	-	5.2	-		
t _f *c,d	-	15	-		
Source-Drain Diode					
V _{SD} *d	-	0.9	1.2	V	I _S =0.2A, V _{GS} =0V
t _{rr}	-	4.1	-	ns	I _F =0.5A, di/dt=100A/μs
Q _{rr}	-	1.1	-	nC	

Note:

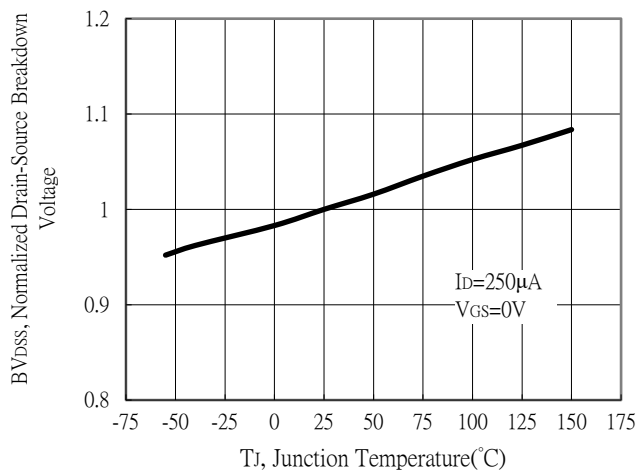
- *a. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The power dissipation P_D is based on $R_{\theta JA}$ and the maximum allowed junction temperature of 150°C . The value in any given application depends on the user's specific board design.
- *b. 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 $T_J=25^{\circ}\text{C}$.
- *c. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
- *d. Independent of operating temperature.

Typical Characteristics

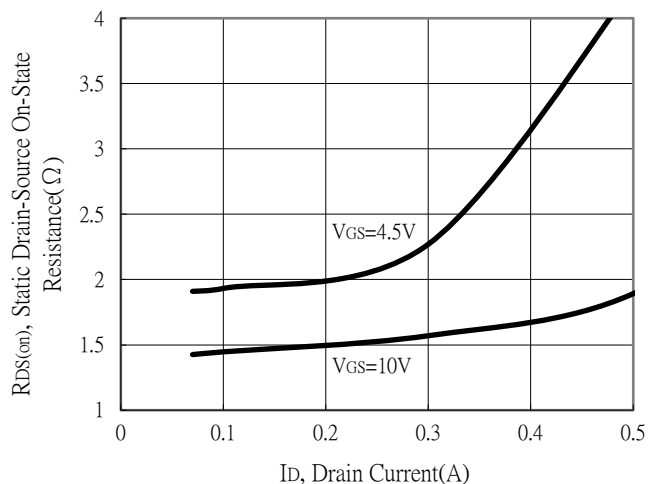
Typical Output Characteristics



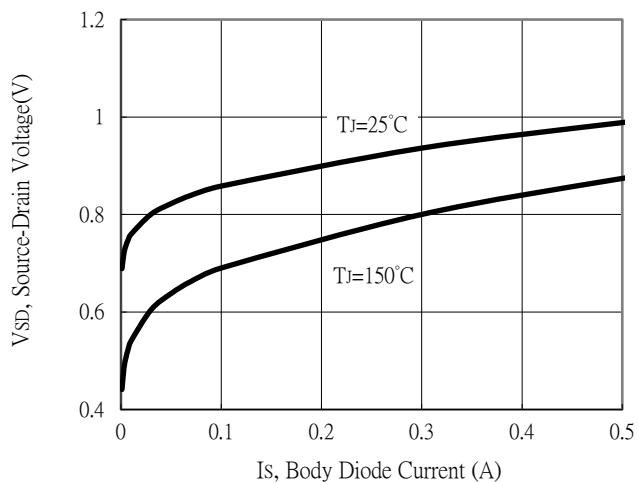
Breakdown Voltage vs Ambient Temperature



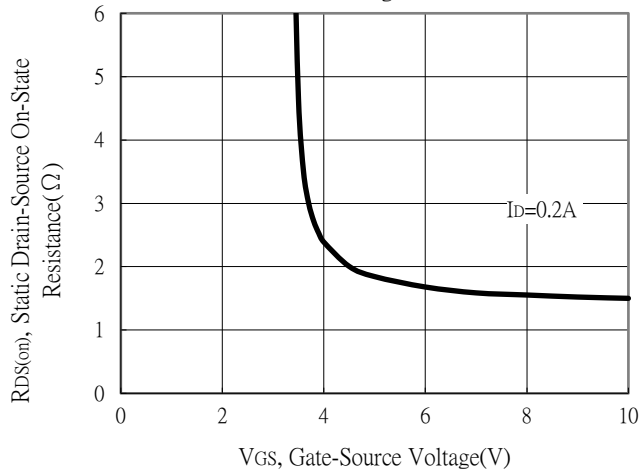
Static Drain-Source On-State resistance vs Drain Current



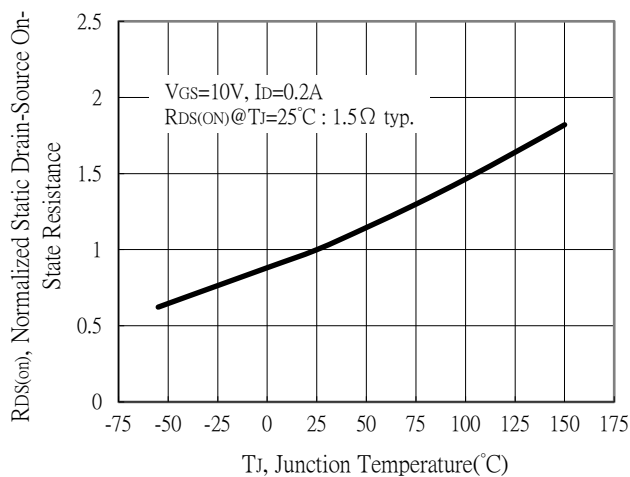
Body Diode Current vs Source-Drain Voltage



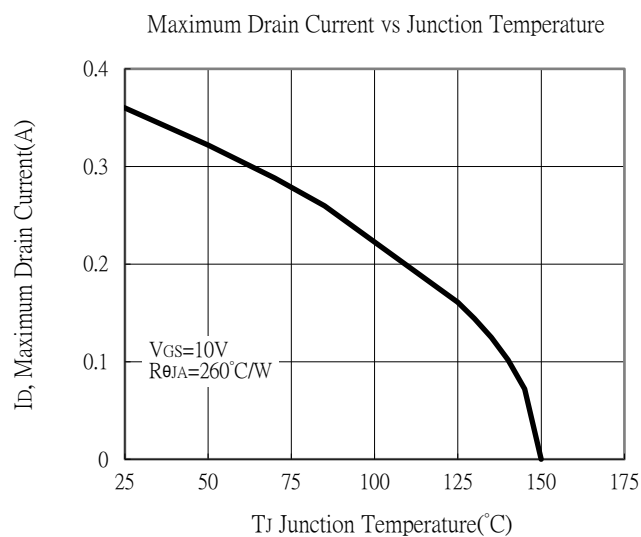
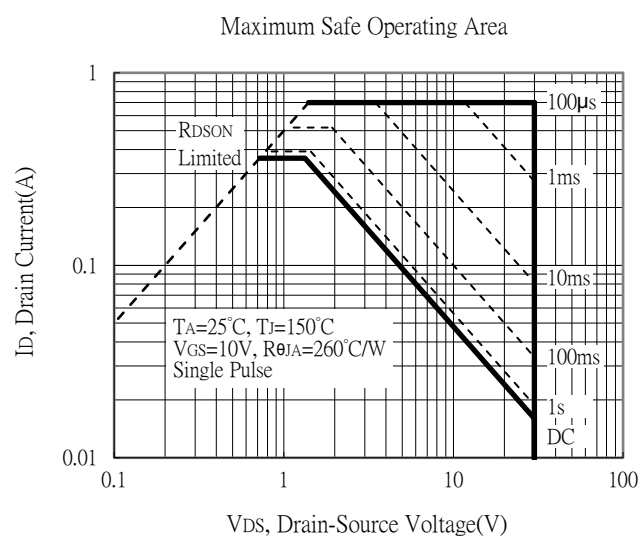
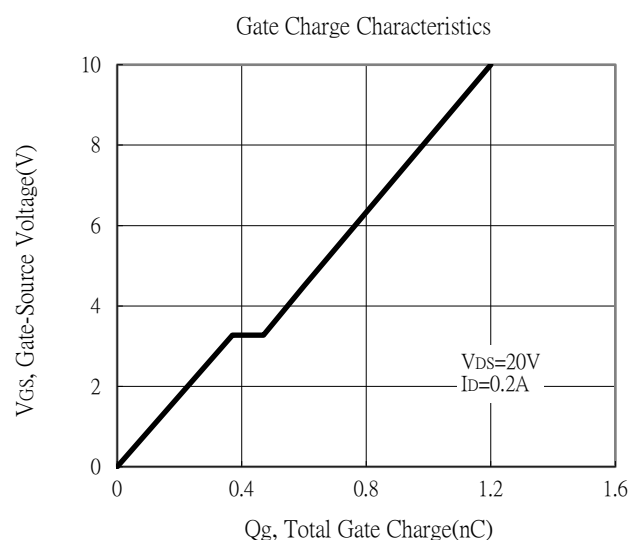
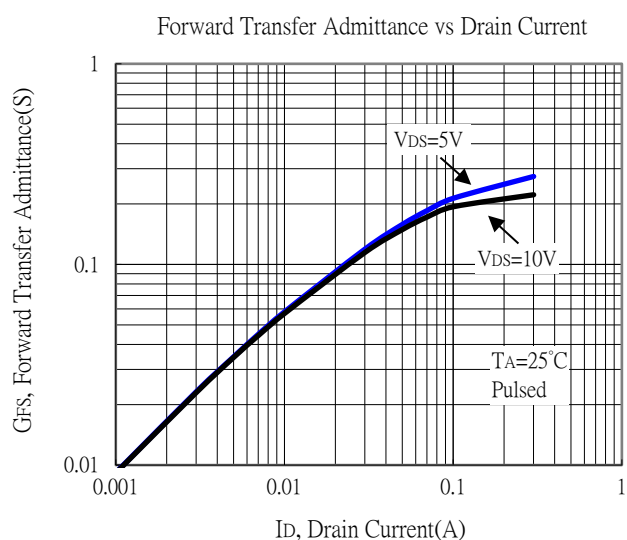
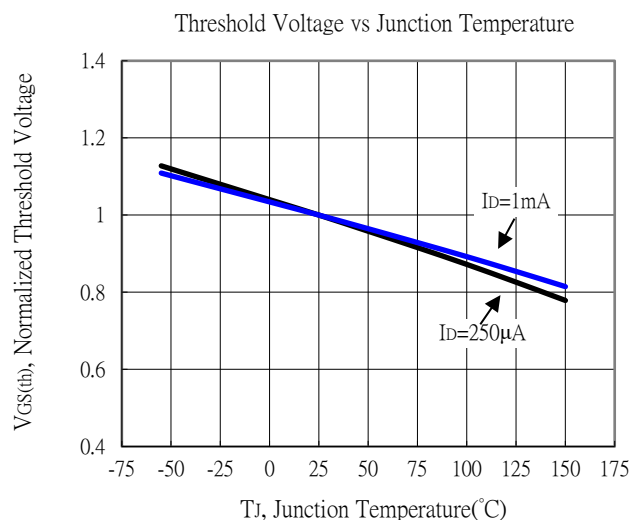
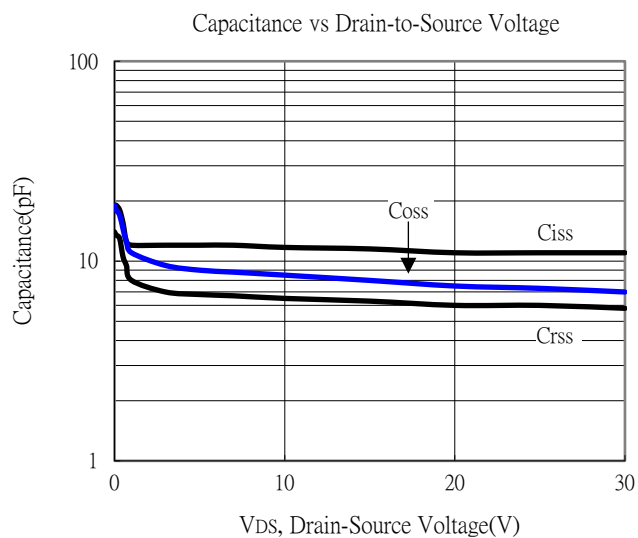
Static Drain-Source On-State Resistance vs Gate-Source Voltage



Drain-Source On-State Resistance vs Junction Temperature

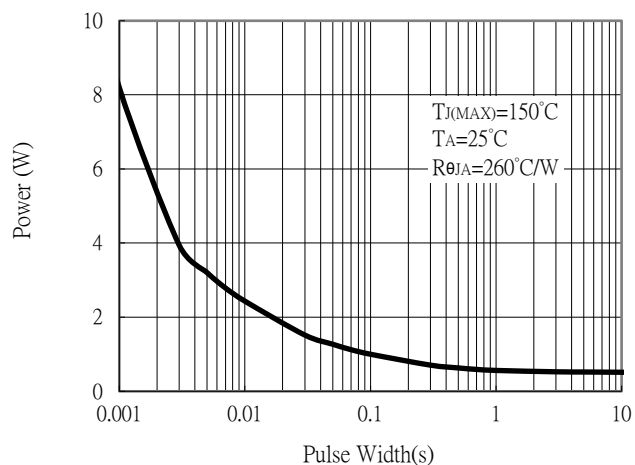


Typical Characteristics

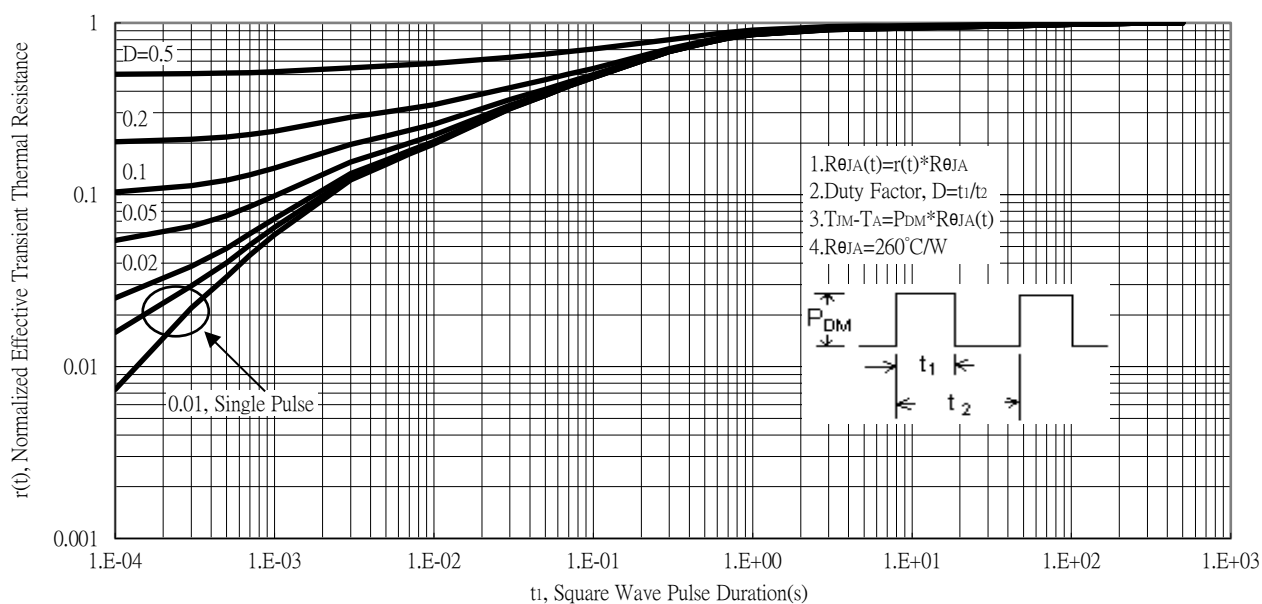


Typical Characteristics

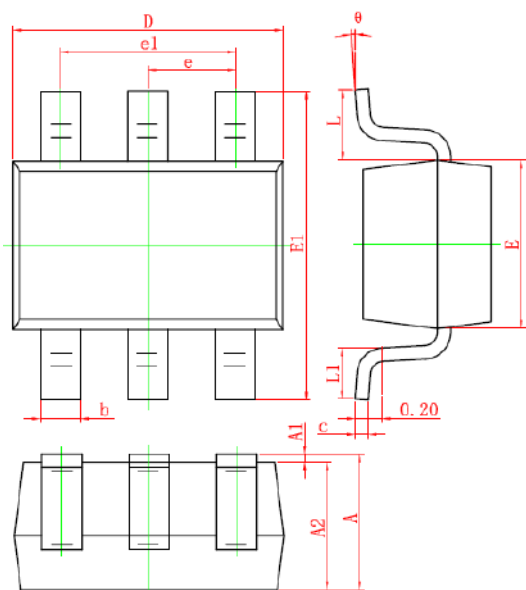
Single Pulse Power Rating, Junction to Ambient



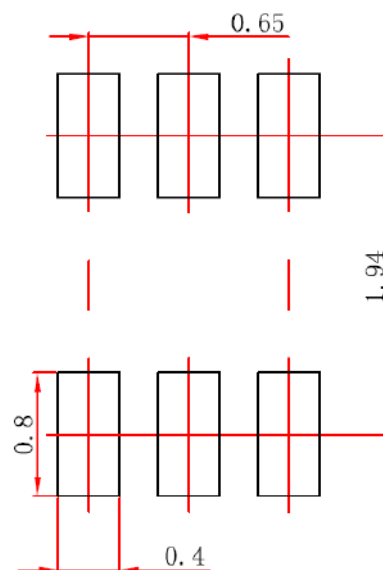
Transient Thermal Response Curves



SOT-363 Dimension



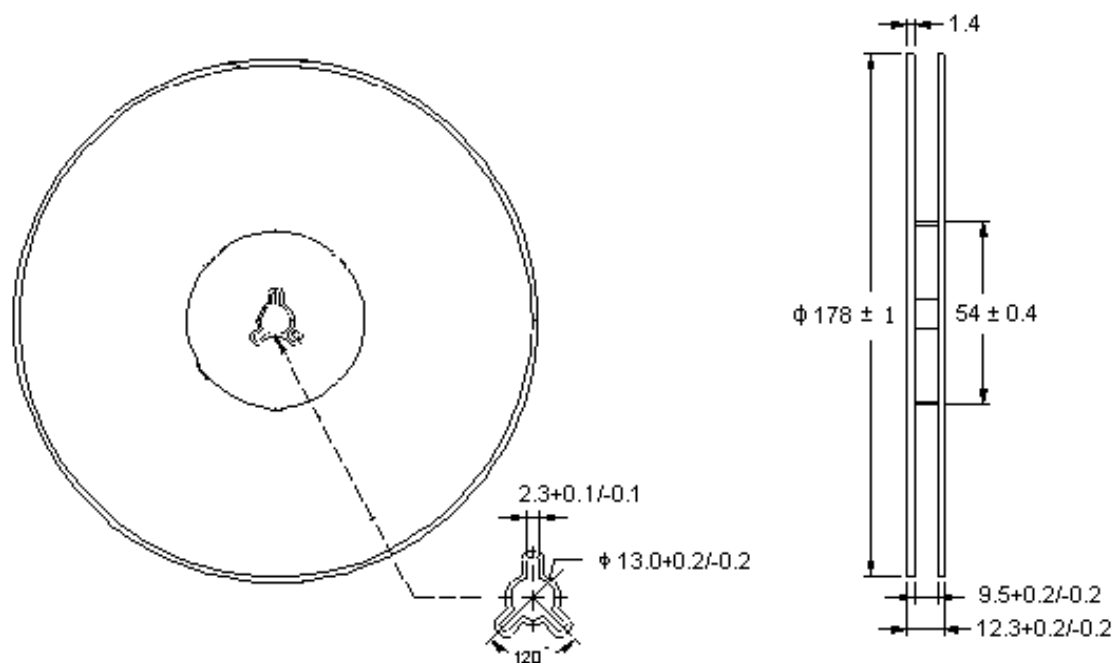
6-Lead SOT-363 Plastic Surface Mount Package



Recommended Soldering Footprint

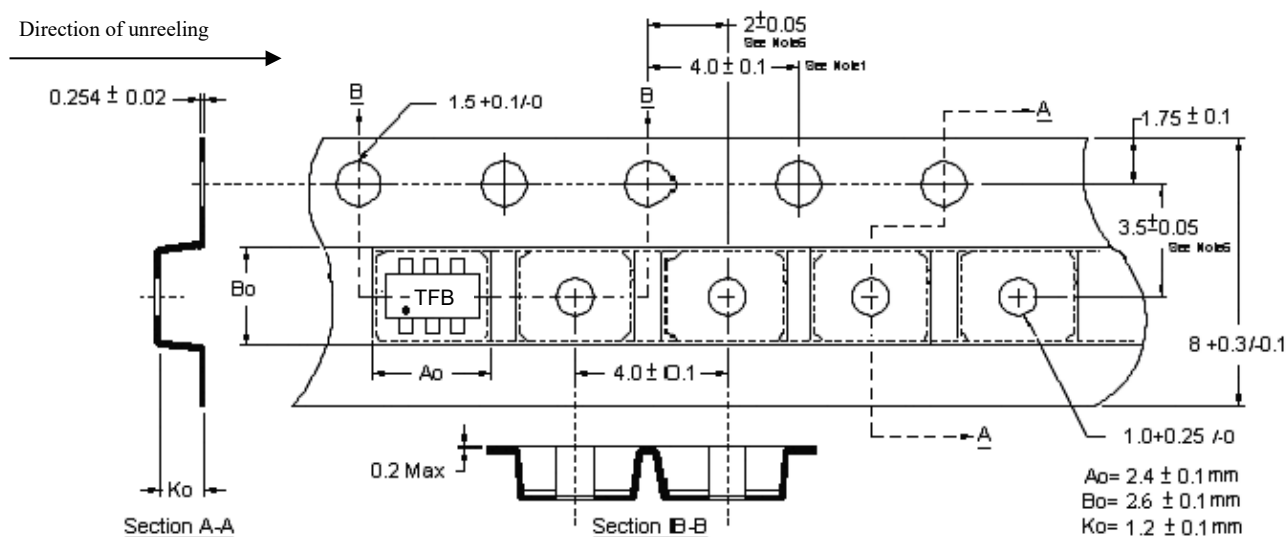
DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.035	0.043	0.900	1.100	E1	0.085	0.096	2.150	2.450
A1	0.000	0.004	0.000	0.100	e	0.026	TYP.	0.650	TYP.
A2	0.035	0.039	0.900	1.000	e1	0.047	0.055	1.200	1.400
b	0.006	0.014	0.150	0.350	L	0.021	REF.	0.525	REF.
c	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					

Reel Dimension



Unit: millimeter

Carrier Tape Dimension



Notes

1. 10 sprocket hole pitch cumulative tolerance ± 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