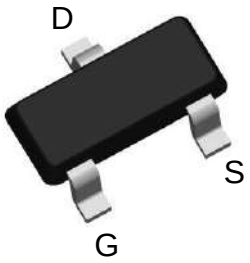
P-C hannel Enhancement Mode MOSFET

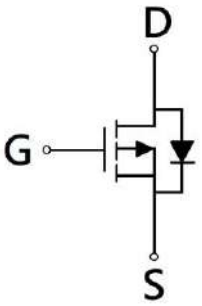
Features:

- Advanced trench process technology
- High density cell design for ultra low on resistance
- Pb-free lead plating and halogen-free package

SOT-23



BV_{DSS}		-150V
I_D@V_{GS}=-10V, T_A=25°C		-0.77A
$R_{DSON(TYP)}$	V_{GS}=-10V, I_D=-0.5A	0.8Ω



G : Gate S : Source D : Drain

Ordering Information

Device	Package	Shipping
KWE800P15	SOT-23 (Pb-free lead plating and halogen-free package)	3000 pcs / tape & reel

Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V_{DS}	-150	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current @ V_{GS}=-10V	T_A=25°C	I_D	-0.77 (Note 4)	A
	T_A=70°C		-0.62 (Note 4)	
Pulsed Drain Current	(Note 1&2)	I_{DM}	-3.2	
Maximum Power Dissipation	T_A=25°C	P_D	1.25	W
	T_A=70°C		0.8	
Operating Junction and Storage Temperature		Tj, Tstg	-55~+150	°C

Thermal Performance

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Case , max	$R_{\theta JC}$	50	°C/W
Thermal Resistance, Junction-to-Ambient , max (Note 4)	$R_{\theta JA}$	100	

Note : 1. Pulse width limited by maximum junction temperature.
2. Pulse width≤300μs, duty cycle≤2%
3. Human body model, 1.5kΩ in series with 100pF.
4. Surface mounted on 1 in²copper pad of FR-4 board, t≤5s; 120°C/W at steady state; 417°C/W when mounted on minimum copper pad.

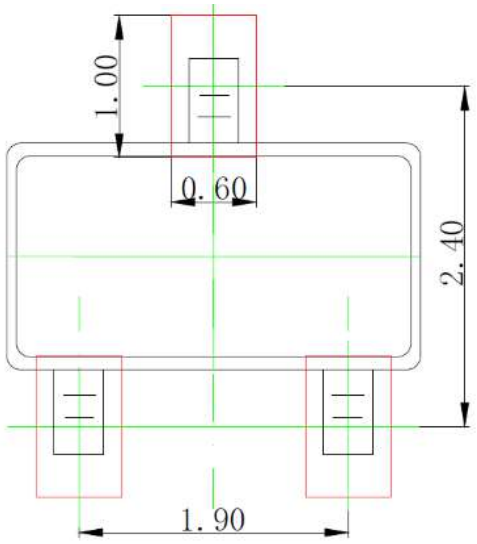
Electrical Characteristics (Tj=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	-150	-	-	V	V_{GS}=0V, I_D=-250μA
$V_{GS(th)}$	-2.0	-	-4.0		V_{DS}=V_{GS}, I_D=-250μA
I_{GSS}	-	-	±100	nA	V_{GS}=±20V, V_{DS}=0V
I_{DSS}	-	-	-1	μA	V_{DS}=-120V, V_{GS}=0V
*$R_{DS(ON)}$	-	0.8	1.15	Ω	V_{GS}=-10V, I_D=-0.5A
*G_{FS}	-	1.6	-	S	V_{DS}=-10V, I_D=-0.5A
Dynamic					
Ciss	-	283	-	pF	V_{DS}=-75V, V_{GS}=0V, f=1MHz
Coss	-	21	-		
Crss	-	21	-		
*$t_{d(ON)}$	-	7	-	ns	V_{DS}=-75V, I_D=-0.5A, V_{GS}=-10V, R_G=6Ω
*t_r	-	16.5	-		
*$t_{d(OFF)}$	-	17.5	-		
*t_f	-	17.8	-		

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
*Qg	-	6.8	-	nC	V_{DS}=-75V, I_D=-0.5A, V_{GS}=-10V
*Qgs	-	1.6	-		
*Qgd	-	1.7	-		
Rg	-	5.6	-	Ω	f=1MHz
Source-Drain Diode					
I_S	-	-	-0.77	A	
I_{SM}	-	-	-3.2		
*V_{SD}	-	-0.81	-1.2	V	V_{GS}=0V, I_S=-1A
*trr	-	26.6	-	ns	I_F=-0.5A, V_{GS}=0V, dI_F/dt=100A/μs
*Qrr	-	25	-	nC	

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

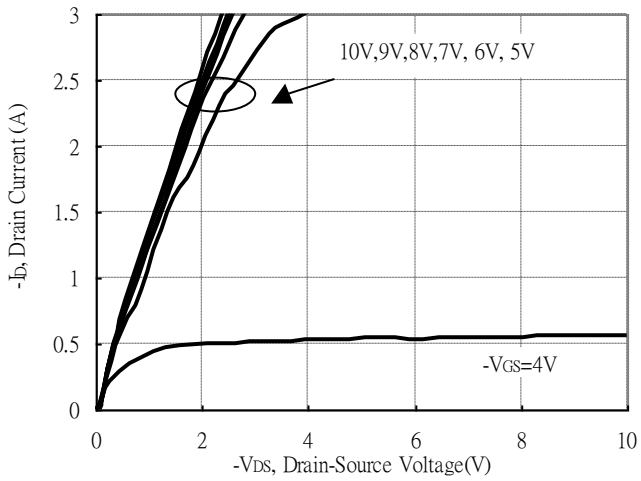
Recommended Soldering Footprint



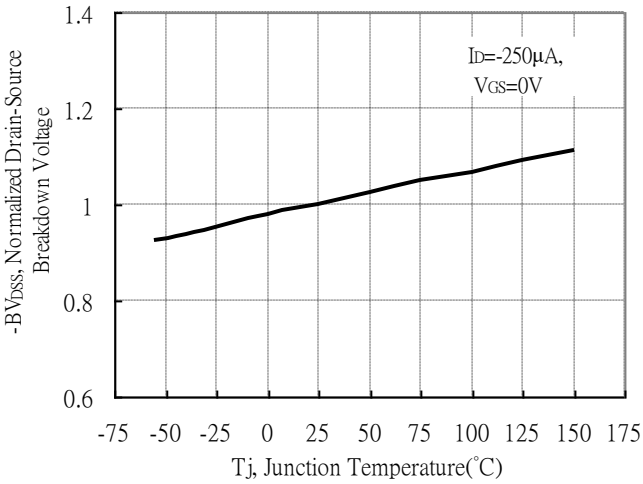
Unit : mm

Typical Characteristics

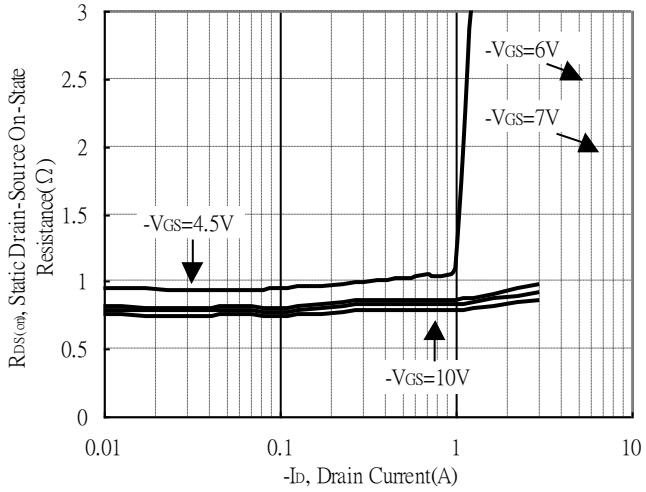
Typical Output Characteristics



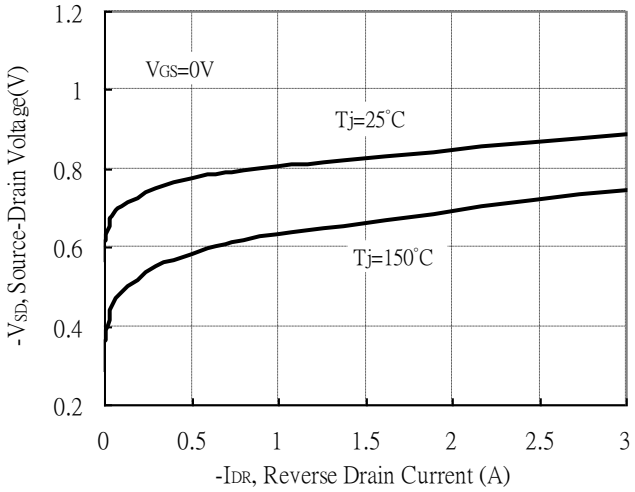
Brekdown Voltage vs Ambient Temperature



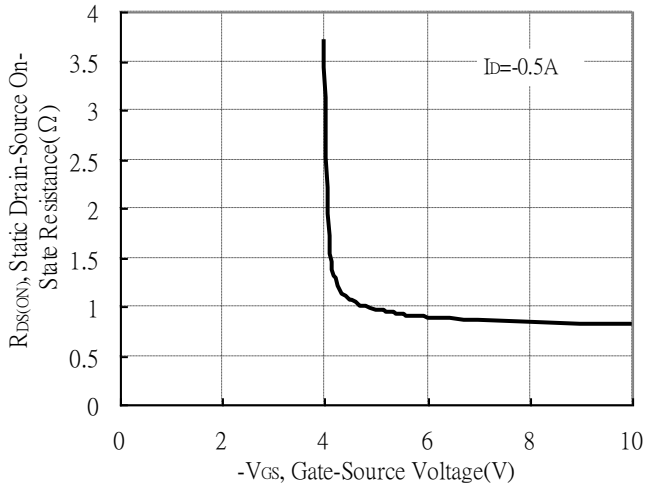
Static Drain-Source On-State resistance vs Drain Current



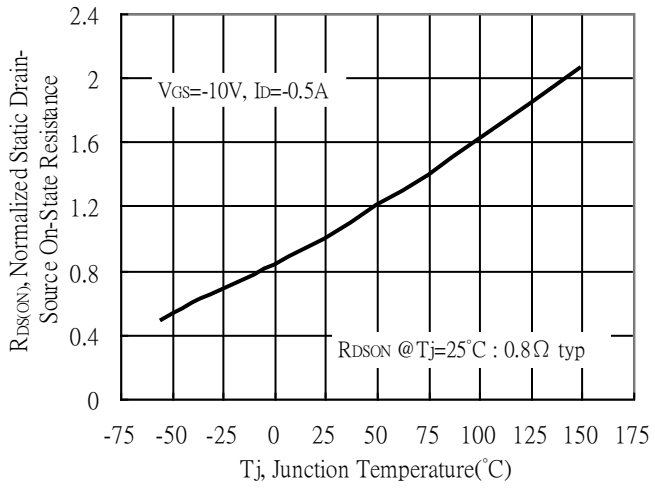
Reverse Drain Current vs Source-Drain Voltage



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

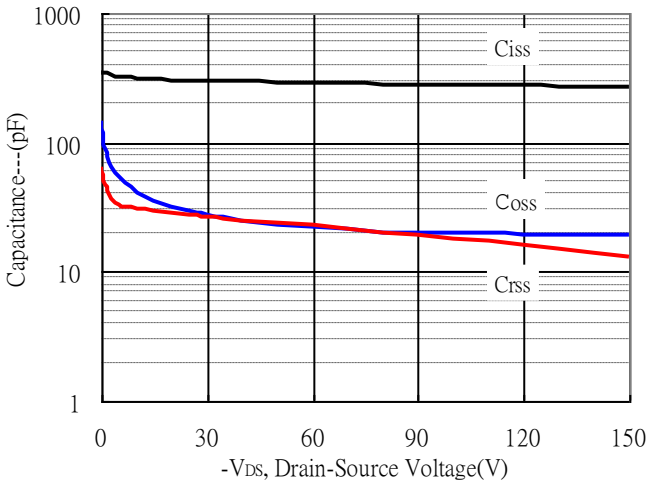


Drain-Source On-State Resistance vs Junction Tempearture

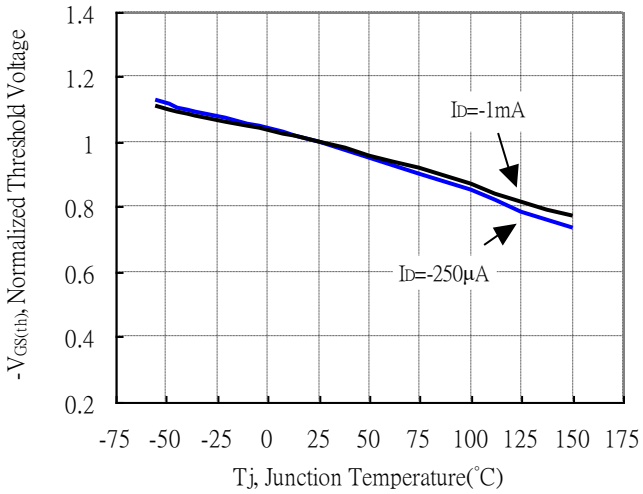


Typical Characteristics (Cont.)

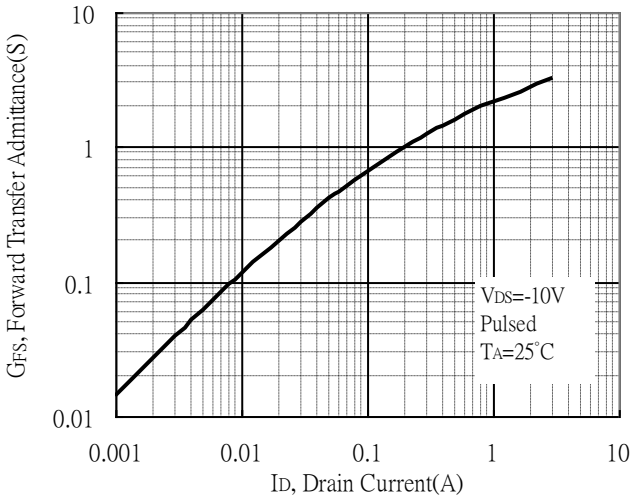
Capacitance vs Drain-to-Source Voltage



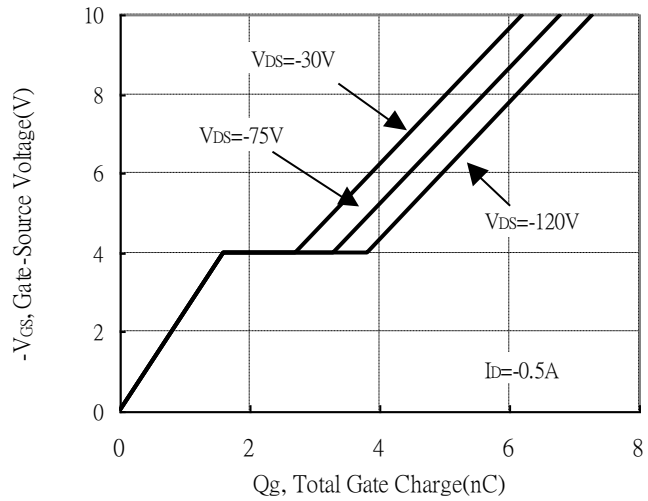
Threshold Voltage vs Junction Tempearture



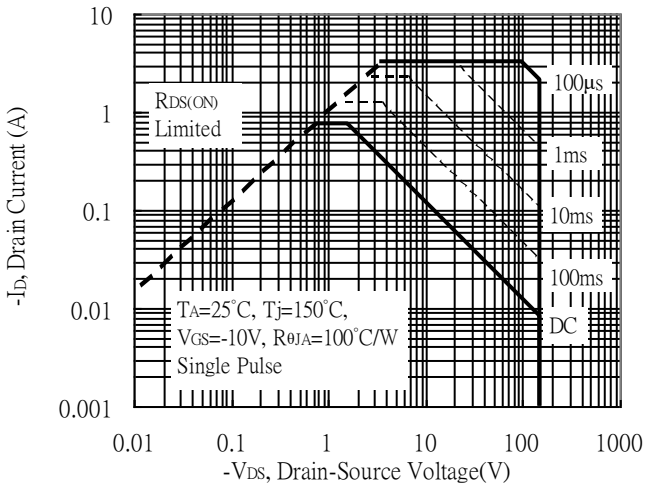
Forward Transfer Admittance vs Drain Current



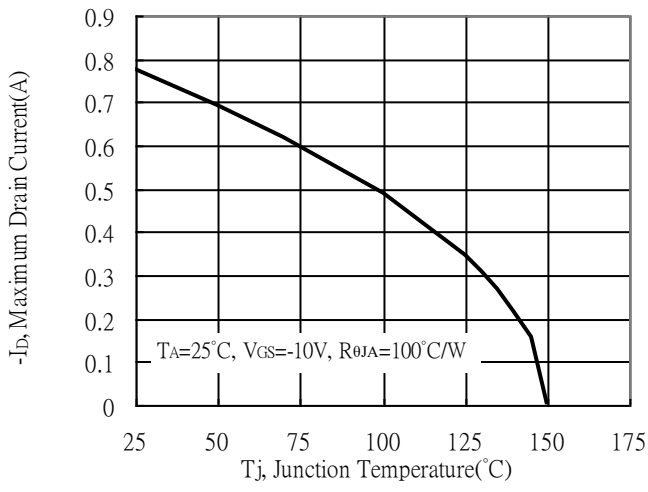
Gate Charge Characteristics



Maximum Safe Operating Area

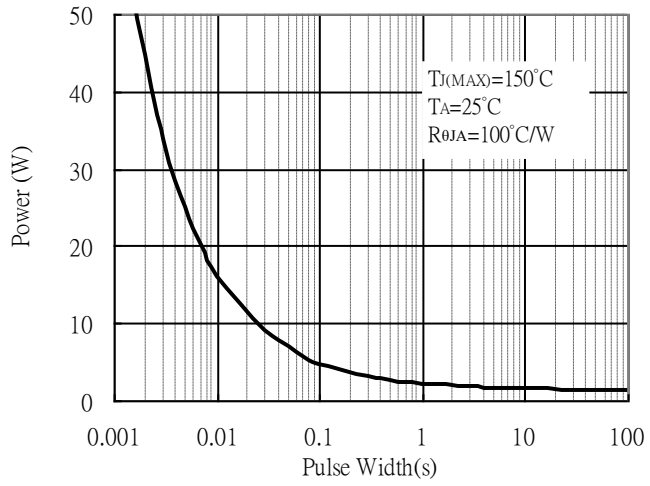


Maximum Drain Current vs JunctionTemperature

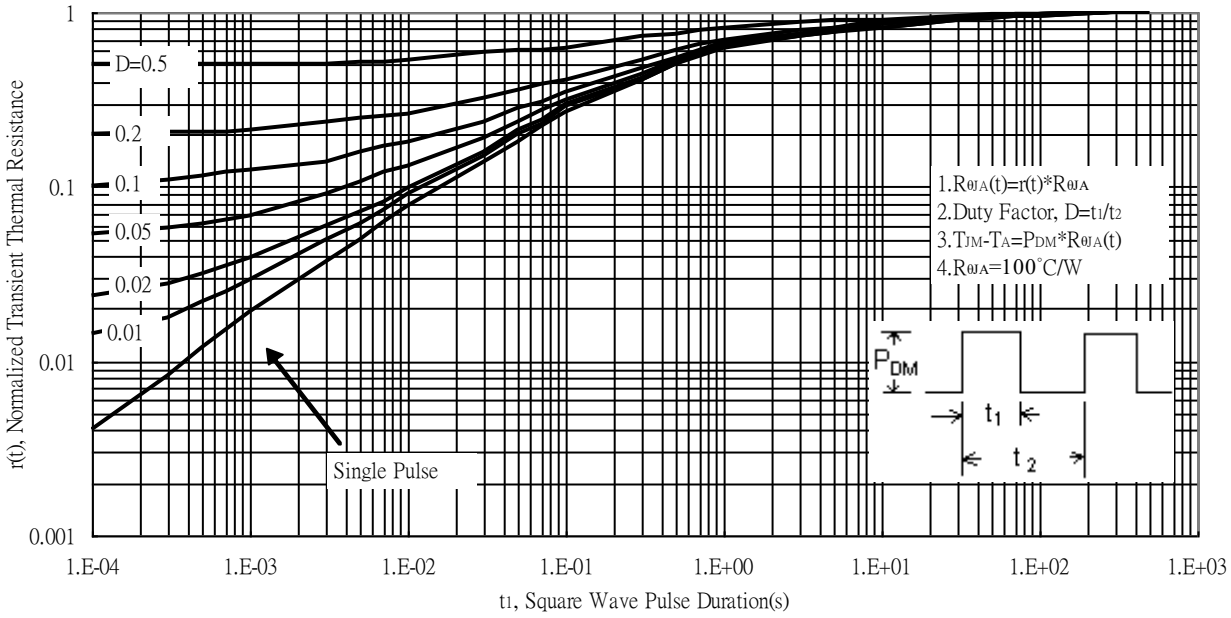


Typical Characteristics (Cont.)

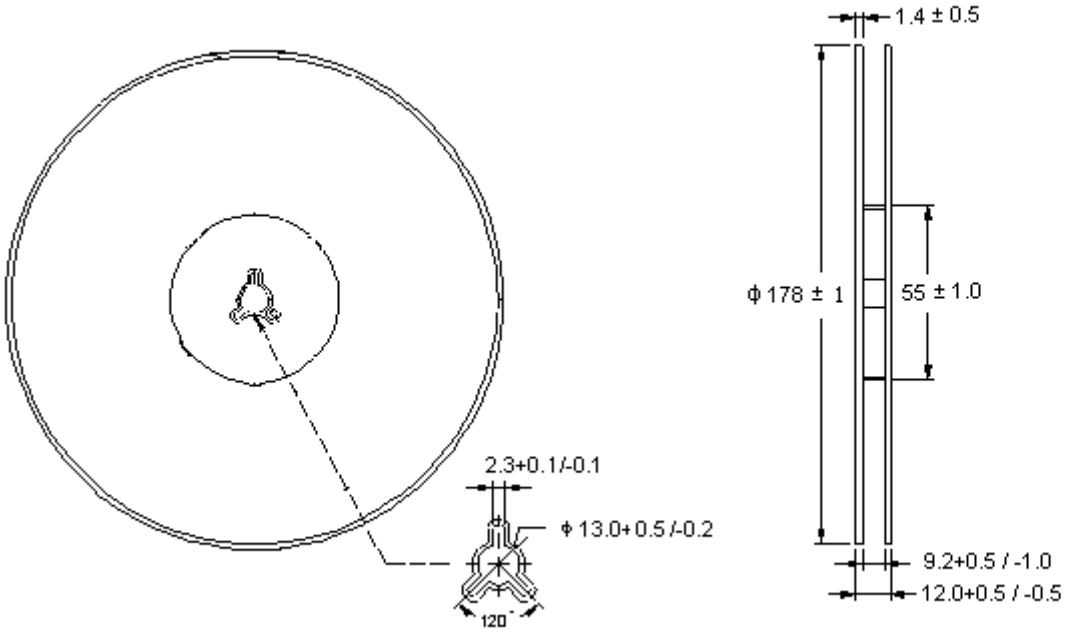
Single Pulse Power Rating, Junction to Ambient
(Note on page 2)



Transient Thermal Response Curves

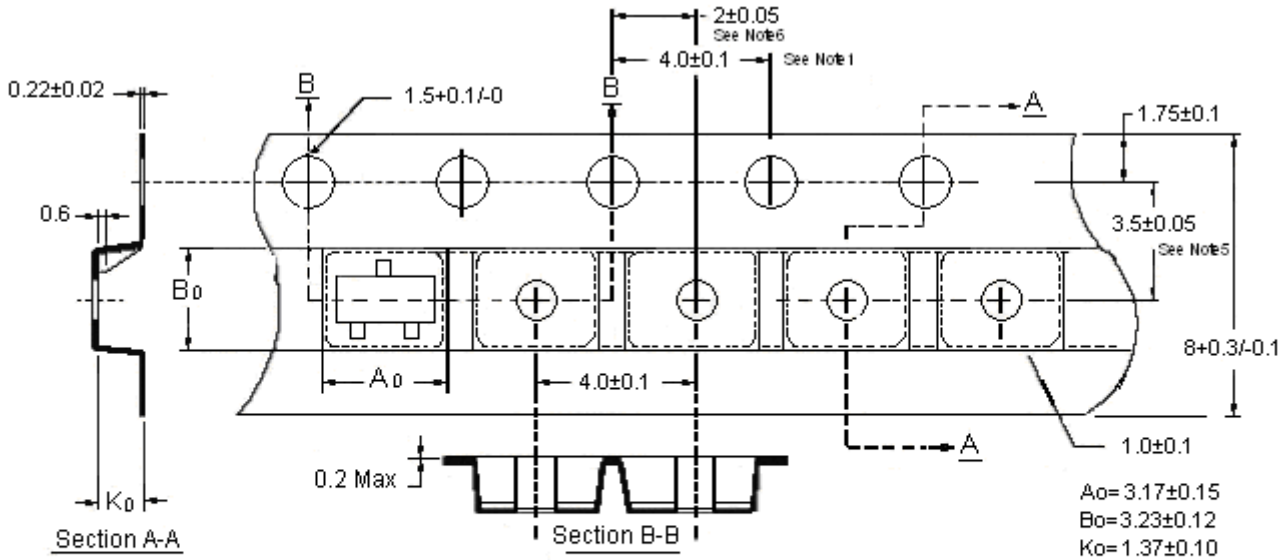


Reel Dimension



Unit: millimeter

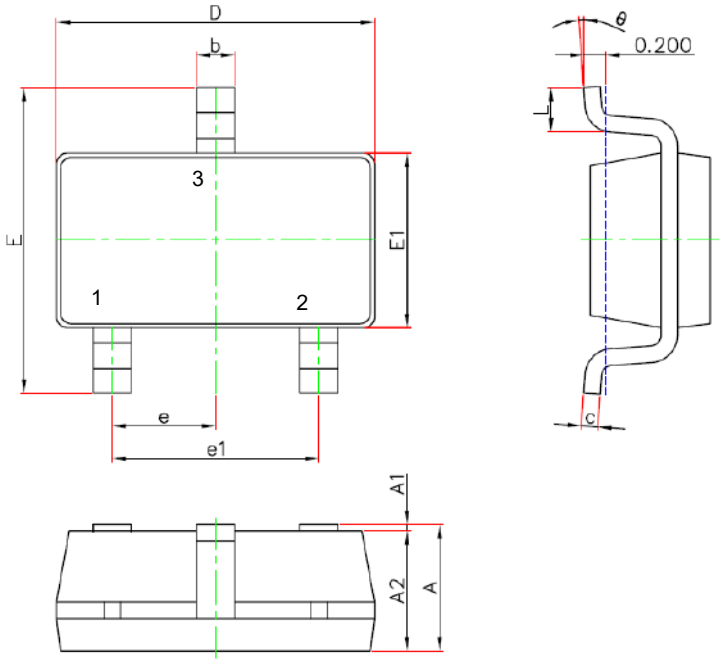
Carrier Tape Dimension



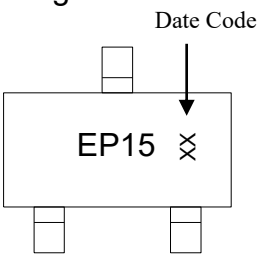
Notes:
1. 10 sprocket hole pitch cumulative tolerance ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material : conductive Black Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.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

Unit : millimeter

SOT-23 Dimension



Marking:



Style: Pin 1.Gate 2.Source 3.Drain

Date Code: Year+Month
Year: 3→2003, 4→2004
Month: 1→1, 2→2, • • •
9→9, A→10, B→11, C→12

3-Lead SOT-23 Plastic
Surface Mounted Package

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.041	0.049	1.05	1.25	E1	0.059	0.067	1.50	1.70
A1	0.000	0.004	0.00	0.10	E	0.104	0.116	2.65	2.95
A2	0.041	0.045	1.05	1.15	e	0.037 BSC		0.95 BSC	
b	0.012	0.020	0.30	0.50	e1	0.071	0.079	1.80	2.00
c	0.004	0.008	0.10	0.20	L	0.012	0.024	0.30	0.60
D	0.111	0.119	2.82	3.02	θ	0°	8°	0°	8°