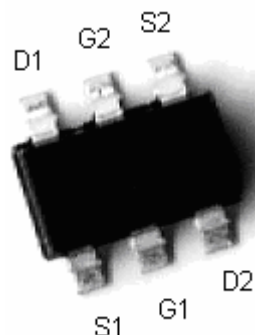


Dual P-Channel MOSFET

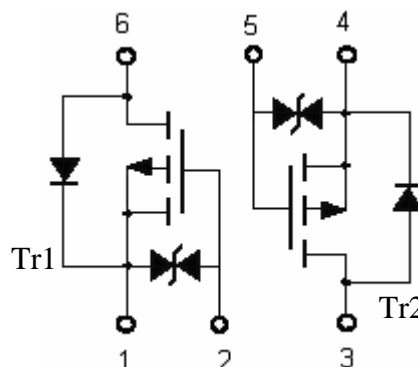
Features:

- Low on-resistance
- High ESD capability
- High speed switching
- Low-voltage drive(-2.5V)
- Pb-free package

SOT-363R



BV_{DSS}	-50V
I_D	-170mA
$R_{DS(on)} @ V_{GS} = -10V, I_D = -100mA$	5Ω (typ)
$R_{DS(on)} @ V_{GS} = -5V, I_D = -100mA$	6Ω (typ)
$R_{DS(on)} @ V_{GS} = -3V, I_D = -30mA$	8Ω (typ)



The following characteristics apply to both Tr1 and Tr2

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

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current @ $T_A = 25^\circ C, V_{GS} = -5V$ (Note 3)	I_D	-170	mA
Continuous Drain Current @ $T_A = 85^\circ C, V_{GS} = -5V$ (Note 3)		-120	
Pulsed Drain Current (Notes 1, 2)	I_{DM}	-800	mA
Maximum Power Dissipation (Note 3)	P_D	$T_A = 25^\circ C$ 300	mW
		$T_A = 85^\circ C$ 160	
Operating Junction and Storage Temperature	T_J, T_{stg}	-55~+150	$^\circ C$

Note : 1. Pulse width limited by maximum junction temperature.

2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

3. Surface mounted on 1 in² copper pad of FR-4 board, $t \leq 5s$.

Thermal Performance

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Ambient(PCB mounted) (Note)	Rth,ja	415	°C/W

Note : Surface mounted on 1 in² copper pad of FR-4 board, t_≤5s.

Electrical Characteristics (T_j=25°C, unless otherwise noted)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	-50	-	-	V	V _{GS} =0, I _D =-250μA
V _{GS(th)}	-1	-1.4	-2	V	V _{DS} =V _{GS} , I _D =-250μA
I _{GSS}	-	-	±8	μA	V _{GS} =±20V, V _{DS} =0
I _{DSS}	-	-	1		V _{DS} =50V, V _{GS} =0
	-	-	10		V _{DS} =40V, V _{GS} =0 (T _j =70°C)
*R _{DS(ON)}	-	5	7	^	V _{GS} =-10V, I _D =-100mA
	-	6	8.5		V _{GS} =-5V, I _D =-100mA
	-	8	12		V _{GS} =-3V, I _D =-30mA
*G _{FS}	80	-	-	mS	V _{DS} =-10V, I _D =-100mA
Dynamic					
C _{iss}	-	24	-	pF	V _{DS} =-25V, V _{GS} =0, f=1MHz
C _{oss}	-	4.6	-		
C _{rss}	-	1.5	-		
t _{d(ON)}	-	2.7	-	ns	V _{DS} =-25V, I _D =-100mA, V _{GS} =-5V, R _G =3.3Ω
t _r	-	3.3	-		
t _{d(OFF)}	-	7.4	-		
t _f	-	5	-		
Q _g	-	1.4	-	nC	V _{DS} =-40V, I _D =-170mA, V _{GS} =-5V
Q _{gs}	-	0.36	-		
Q _{gd}	-	0.29	-		
Source-Drain Diode					
*V _{SD}	-	-0.85	-1.2	V	V _{GS} =0V, I _S =-130mA

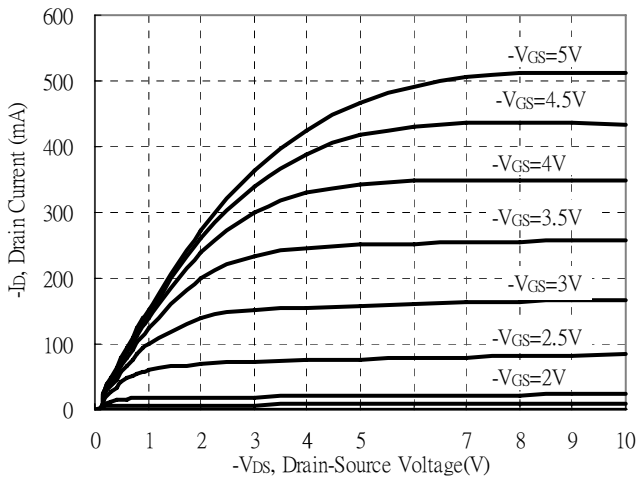
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Ordering Information

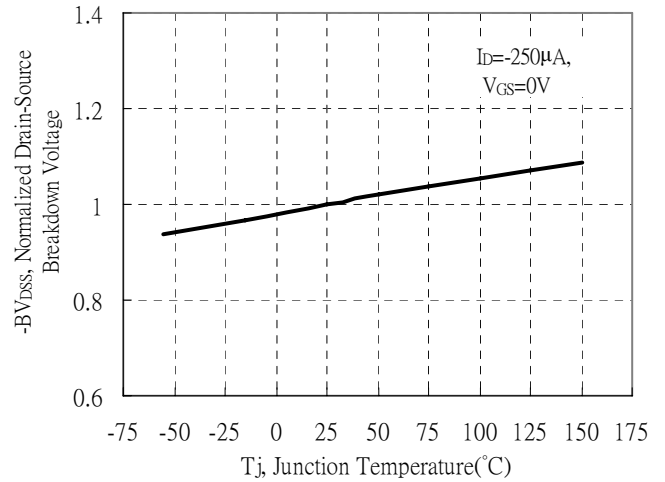
Device	Package	Shipping
BSS84DW	SOT-363 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Typical Characteristics

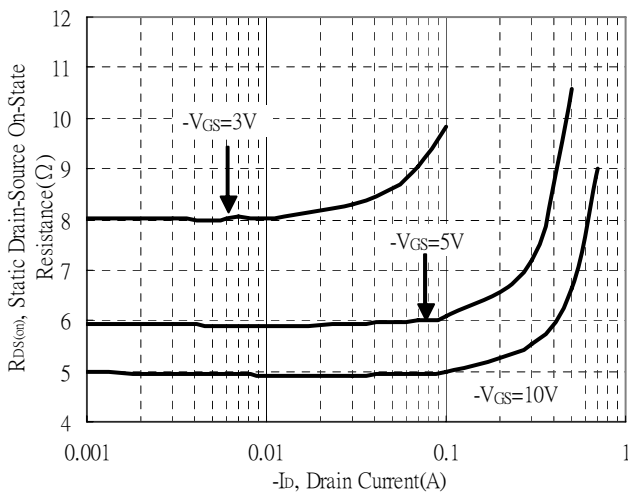
Typical Output Characteristics



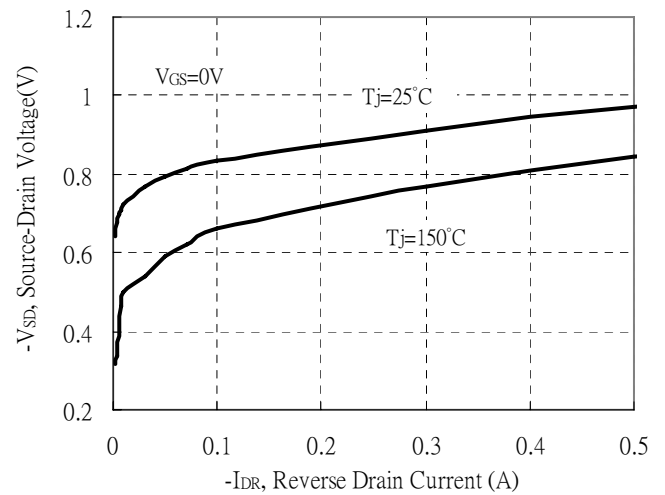
Breakdown Voltage vs Ambient Temperature



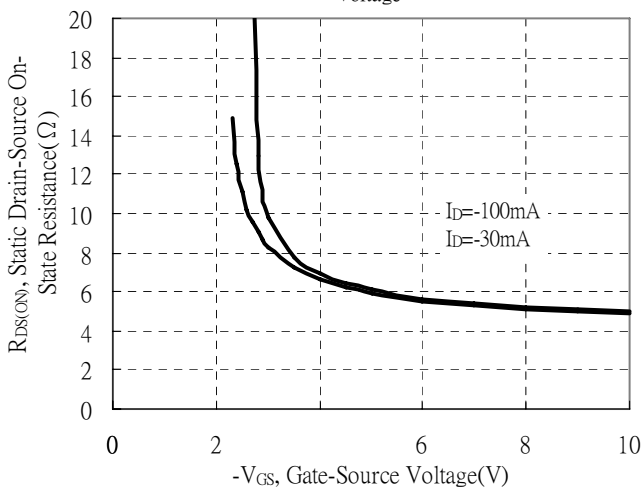
Static Drain-Source On-State resistance vs Drain Current



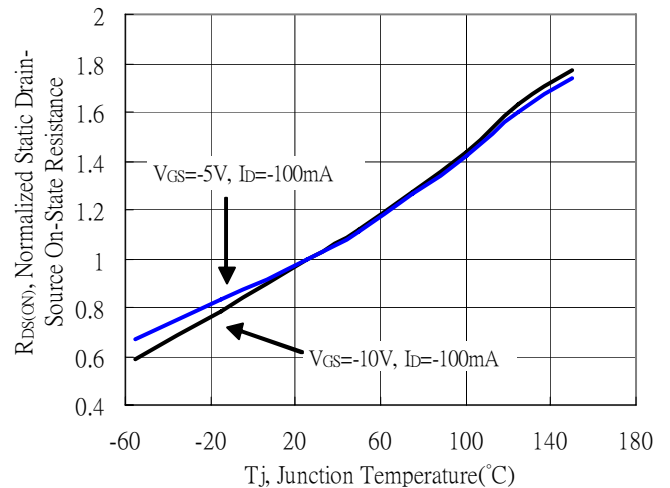
Reverse Drain Current vs Source-Drain Voltage



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

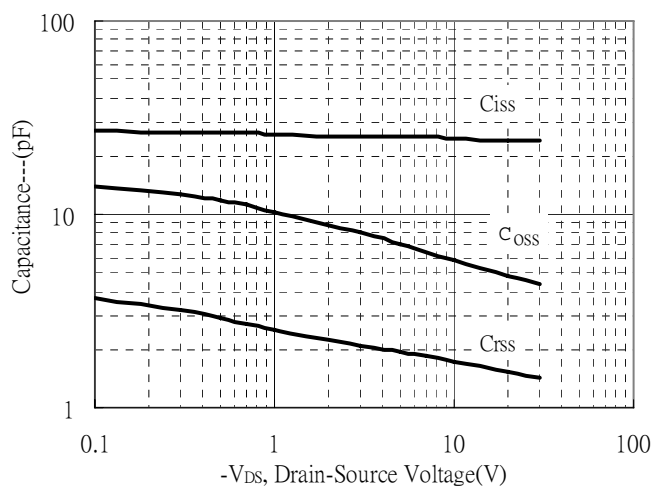


Drain-Source On-State Resistance vs Junction Temperature

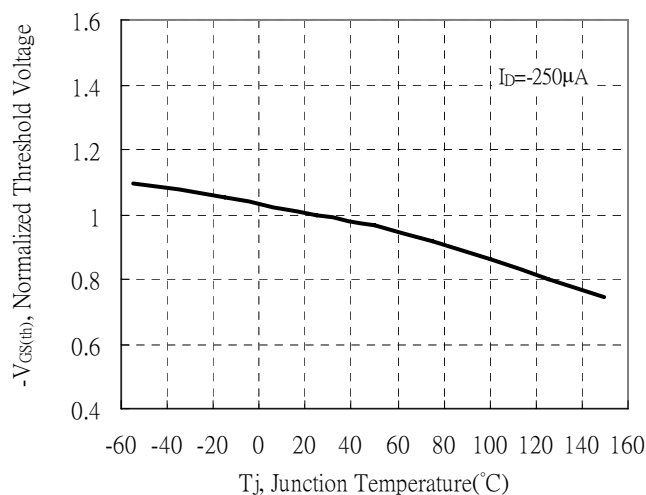


Typical Characteristics(Cont.)

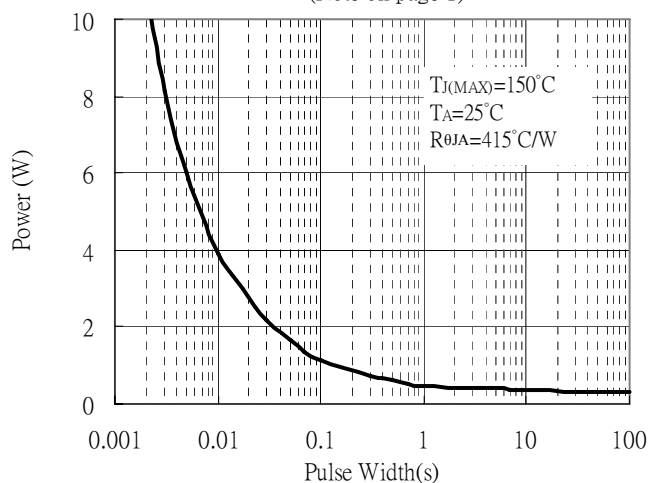
Capacitance vs Drain-to-Source Voltage



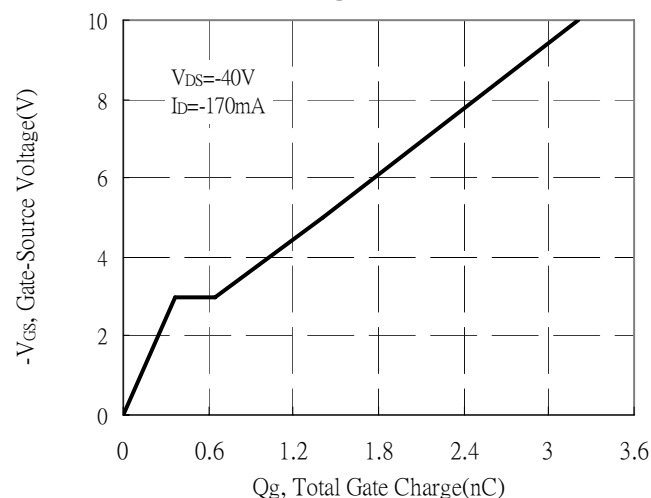
Threshold Voltage vs Junction Temperature



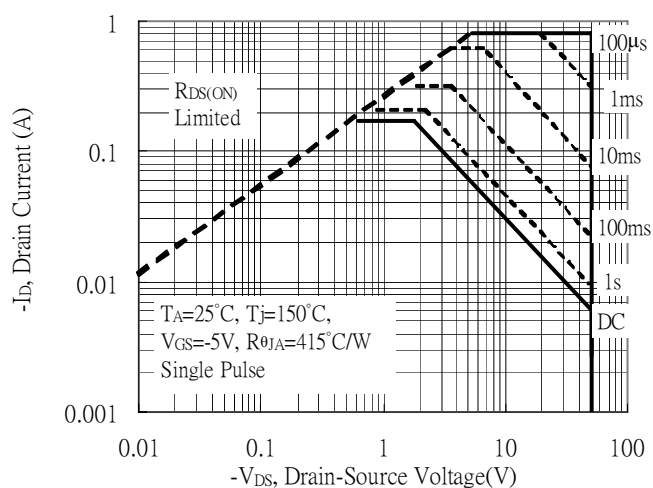
Single Pulse Power Rating, Junction to Ambient
(Note on page 1)



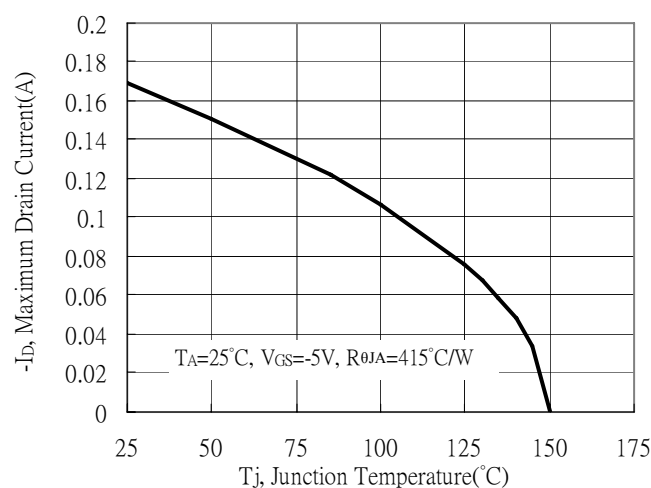
Gate Charge Characteristics



Maximum Safe Operating Area

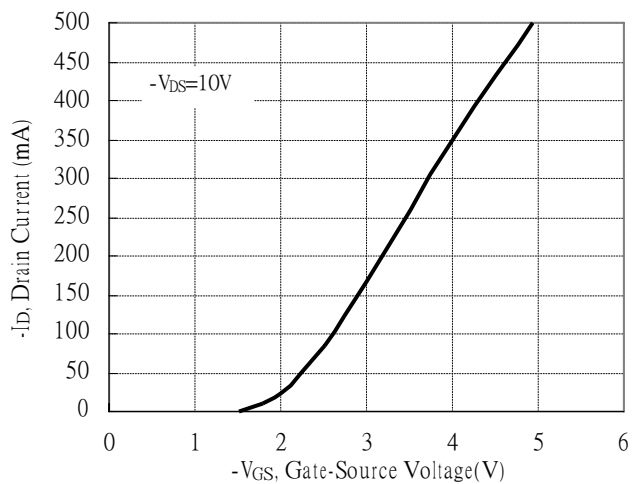


Maximum Drain Current vs Junction Temperature

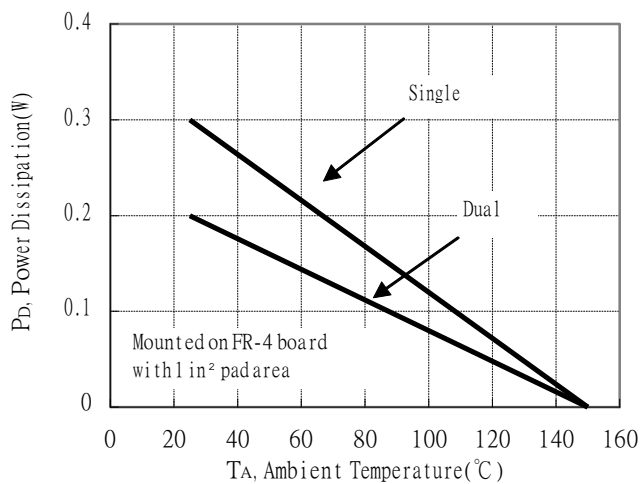


Typical Characteristics(Cont.)

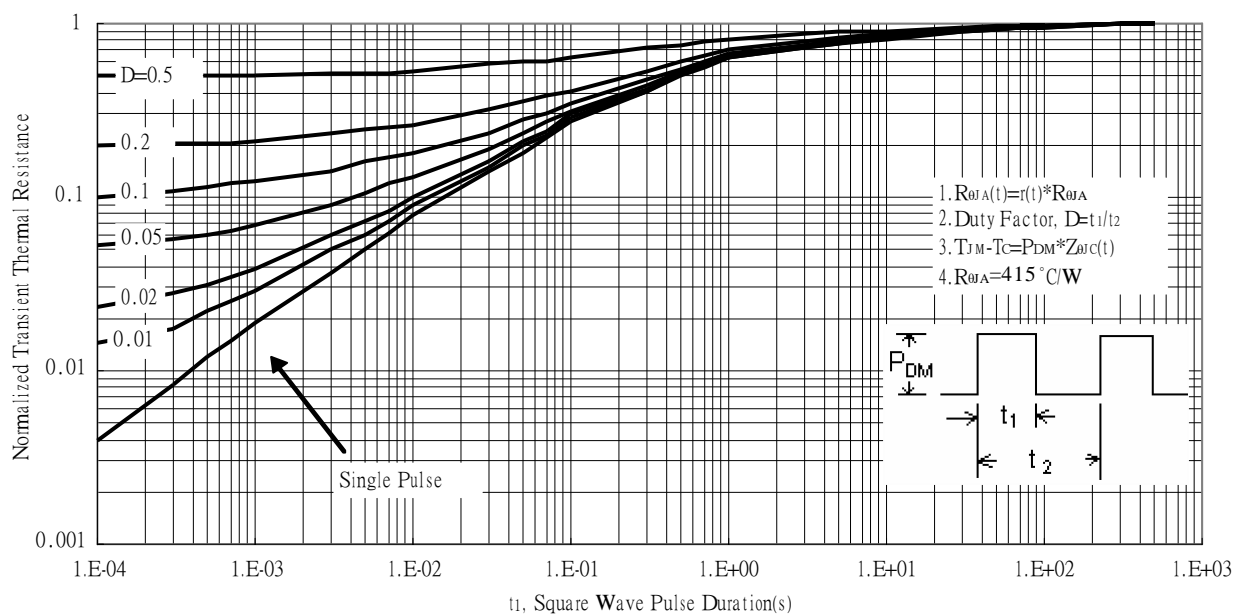
Typical Transfer Characteristics



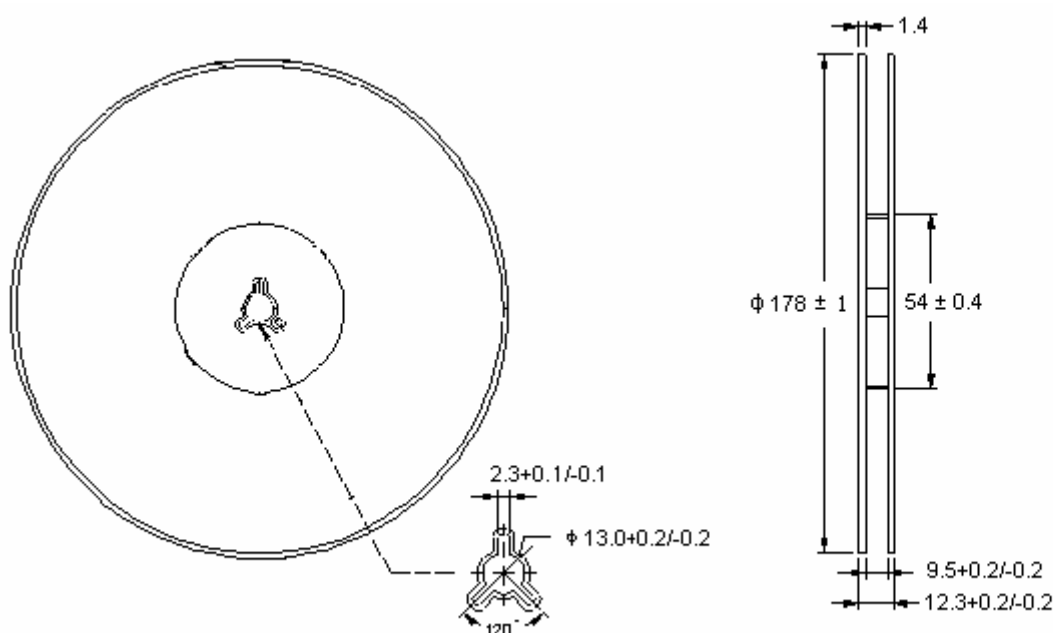
Power Derating Curves



Transient Thermal Response Curves

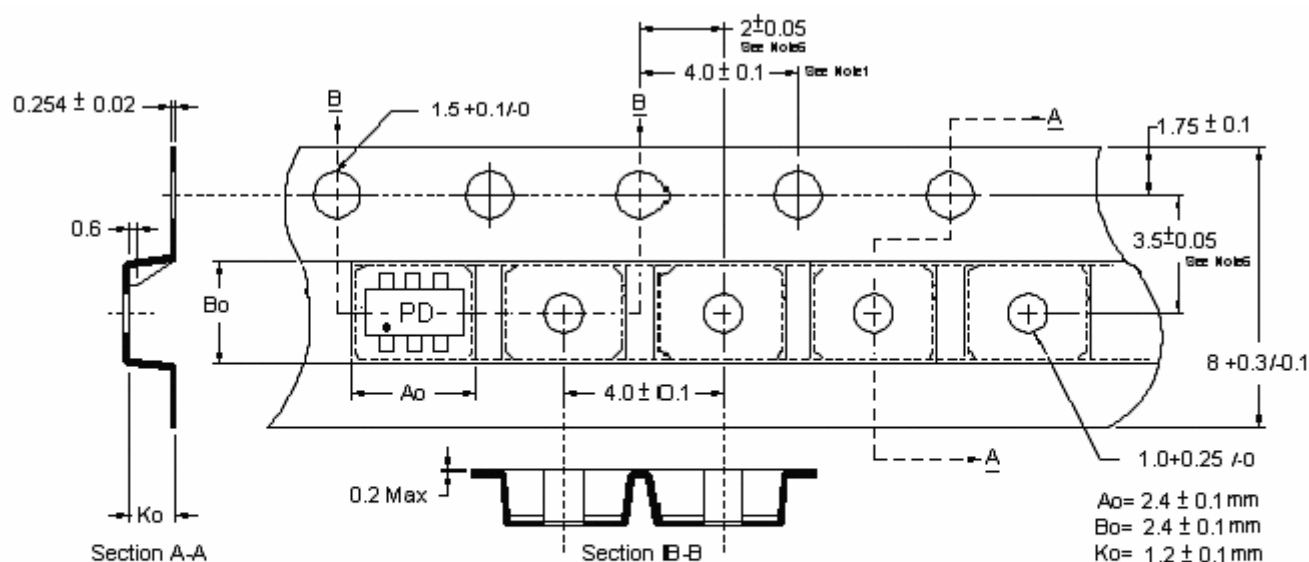


Reel Dimension



Unit: millimeter

Carrier Tape Dimension

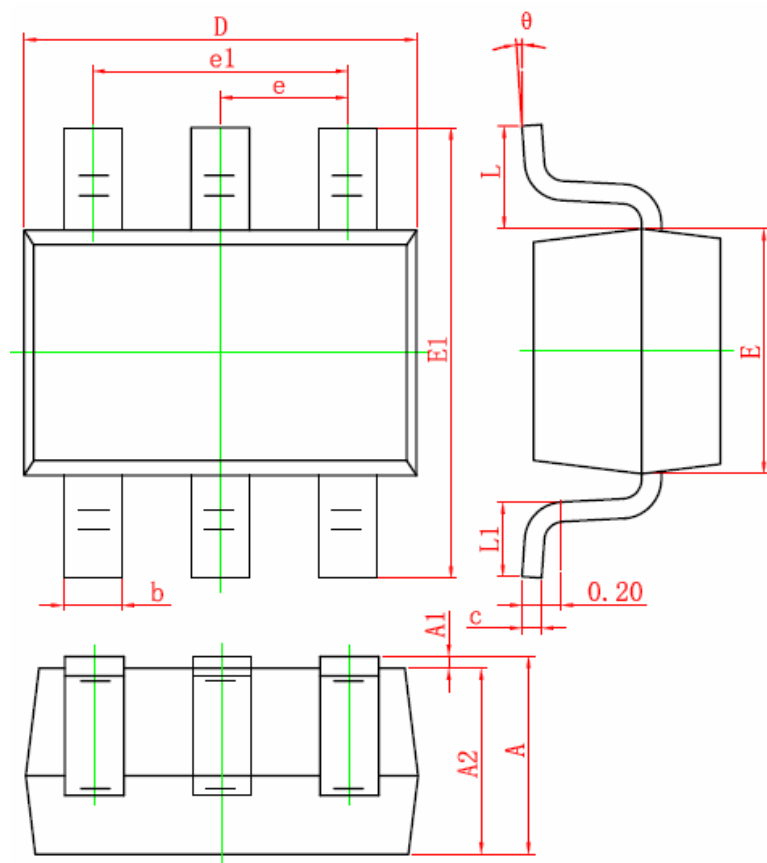


Notes

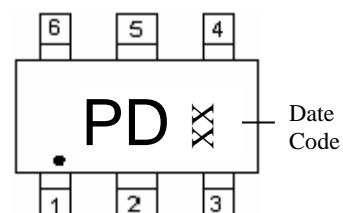
1. 10 sprocket hole pitch cumulative tolerance ± 0.2 .
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Polystyrene.
4. A_0 & B_0 measured on a plane 0.3mm above the bottom of the pocket.
5. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

SOT-363 Dimension



Marking:



6-Lead SOT-363R Plastic
Surface Mounted Package

Style:

Pin 1. Source1 (S1)
 Pin 2. Gate1 (G1)
 Pin 3. Drain2 (D2)
 Pin 4. Source2 (S2)
 Pin 5. Gate2 (G2)
 Pin 6. Drain1 (D1)

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