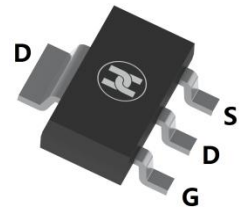
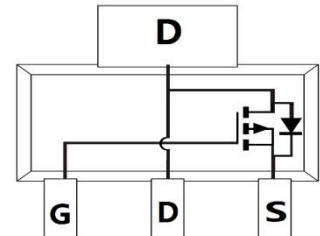


P-CHANNEL HIGH VOLTAGE MOSFET
FEATURES

- $V_{DS}=-450V, R_{DS(ON)} \leq 150\Omega @ V_{GS}=-10V, I_D=-75mA$
- Surface Mount device


SOT-223

MECHANICAL DATA

- Case: SOT-223
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.112 grams (approximate)

MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	-450	V
Gate-source voltage	V_{GS}	± 20	V
Continuous drain current	I_D	-75	mA
Pulsed drain current	I_{DM}	-150	mA
Power dissipation	P_D	2.0	W
Operating and Storage temperature	T_J, T_{STG}	-55 ~ +150	$^\circ C$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
OFF CHARACTERISTICS						
Drain-Source breakdown voltage	$V_{(BR)DSS}$	-450			V	$V_{GS}=0V, I_D=-1mA$
Zero gate voltage drain current($T_J=+25^\circ C$)	I_{DSS}			-20	μA	$V_{DS}=-450V, V_{GS}=0V,$
				-2	mA	$V_{DS}=-360V, V_{GS}=0V, T_A=+125^\circ C$
Gate-body leakage current	I_{GSS}			± 20	nA	$V_{DS}=0V, V_{GS}=\pm 20V$
On-State Drain Current(1)	$I_{D(ON)}$	-100			mA	$V_{DS}=-25V, V_{GS}=-10V$
ON CHARACTERISTICS						
Gate-threshold voltage	$V_{GS(th)}$	-1.5		-4.5	V	$V_{DS}=V_{GS}, I_D=-1mA$
Drain-source on-resistance (1)	$R_{DS(ON)}$		203	250	m Ω	$V_{GS}=-10V, I_D=-5A$
Forward Transconductance (1)(2)						
DYNAMIC CHARACTERISTICS(2)						
Input capacitance	C_{iss}		123		pF	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$
Output capacitance	C_{oss}		42		pF	
Reverse transfer capacitance	C_{rss}		28		pF	
Turn-on delay time(2,3)	$t_{d(on)}$		9.1		nS	$V_{DD}=-25V, I_D=-50mA$
Turn-on rise time(2,3)	t_r		14.9		nS	
Turn-off delay time(2,3)	$t_{d(off)}$		57.4		nS	
Turn-off fall time(2,3)	t_f		34.4		nS	

Notes: 1. Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$.

2. Sample test.

3. Switching times measured with 50 Ω source impedance and <5ns rise time on a pulse generator.

P-CHANNEL HIGH VOLTAGE MOSFET

Typical Characteristics

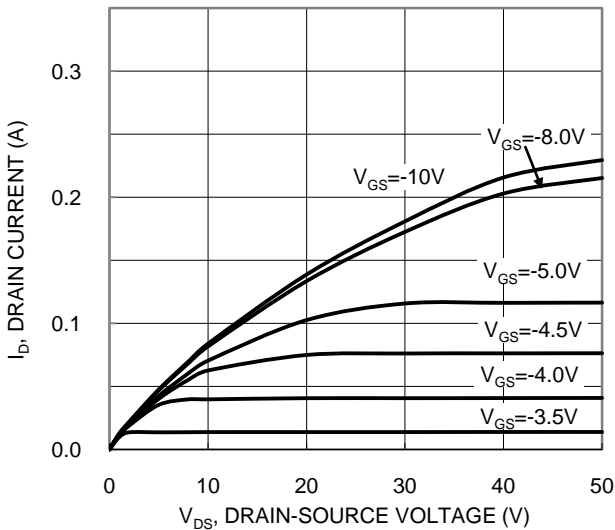


Figure 1. Typical Output Characteristic

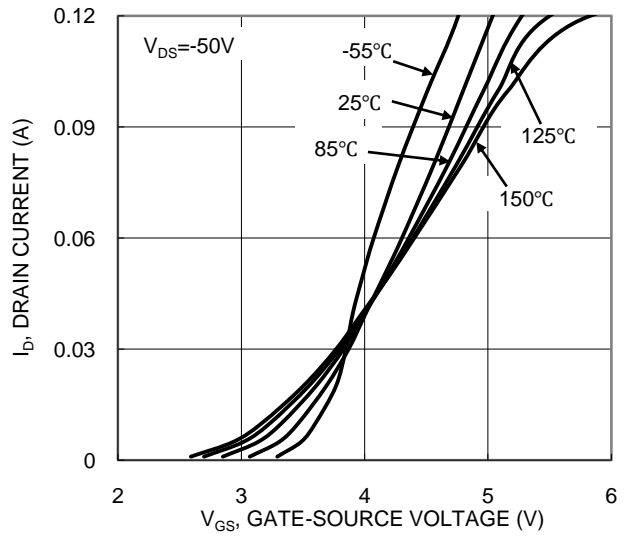


Figure 2. Typical Transfer Characteristic

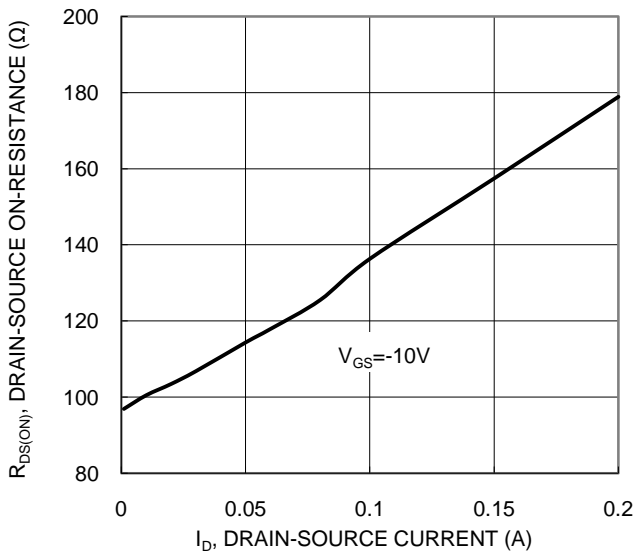


Figure 3. Typical On-Resistance vs Drain Current and Gate Voltage

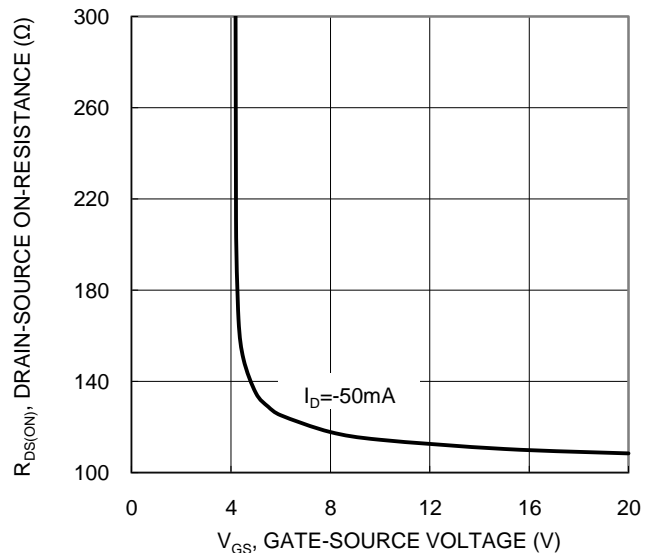


Figure 4. Typical Transfer Characteristic

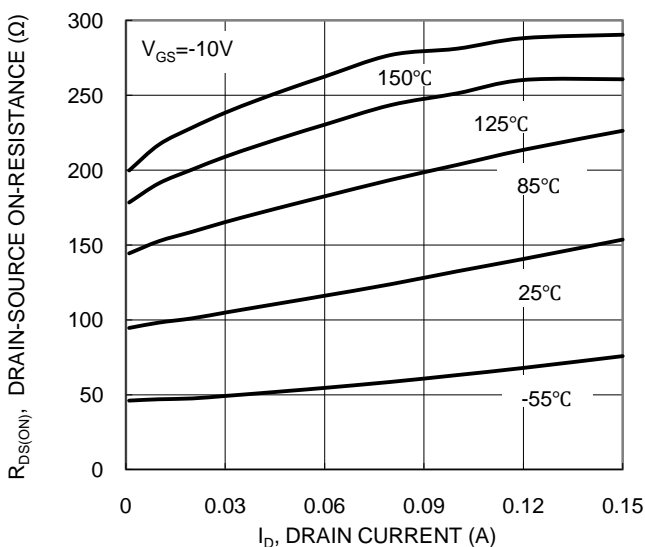


Figure 5. Typical On-Resistance vs Drain Current and Junction Temperature

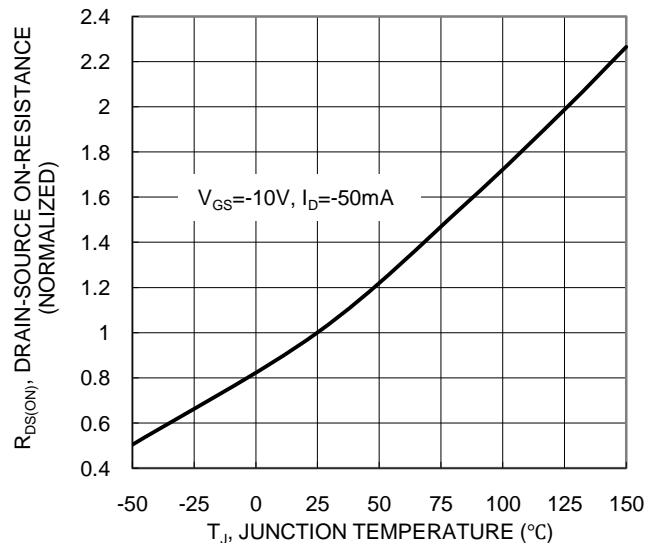


Figure 6. On-Resistance Variation with Junction Temperature

P-CHANNEL HIGH VOLTAGE MOSFET

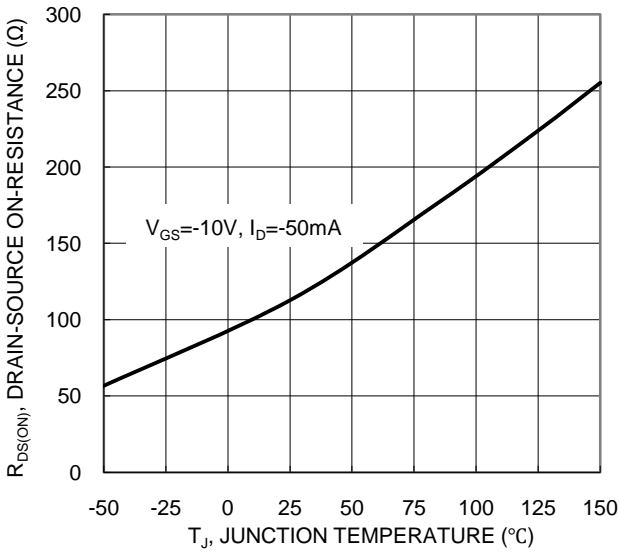


Figure 7. On-Resistance Variation with Junction Temperature

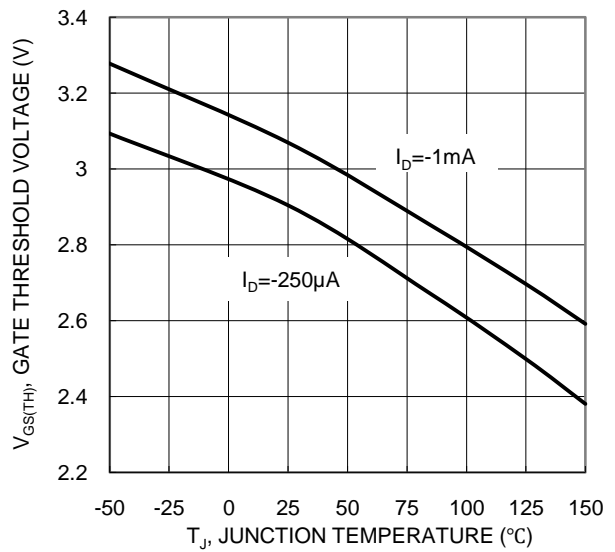


Figure 8. Gate Threshold Variation vs Junction Temperature

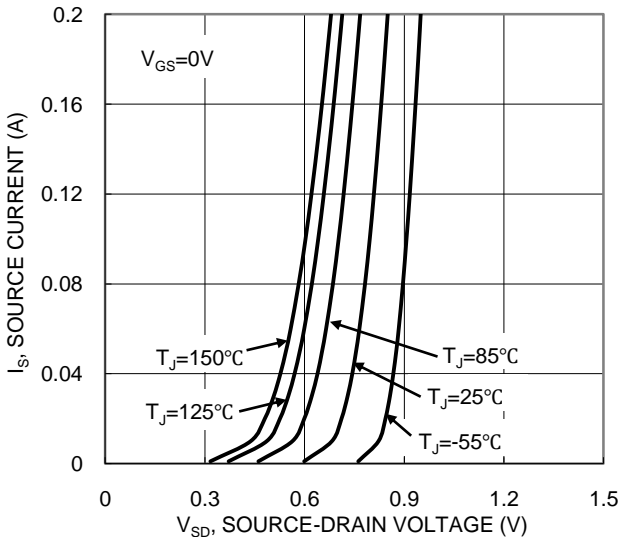


Figure 9. Diode Forward Voltage vs Current

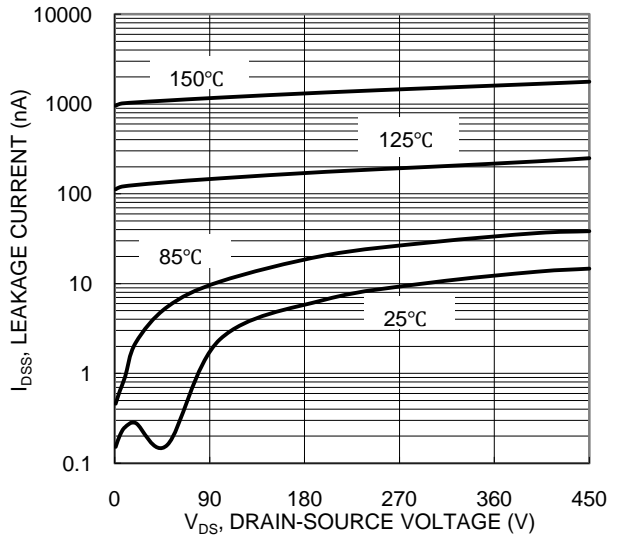


Figure 10. Typical Drain-Source Leakage Current vs Voltage

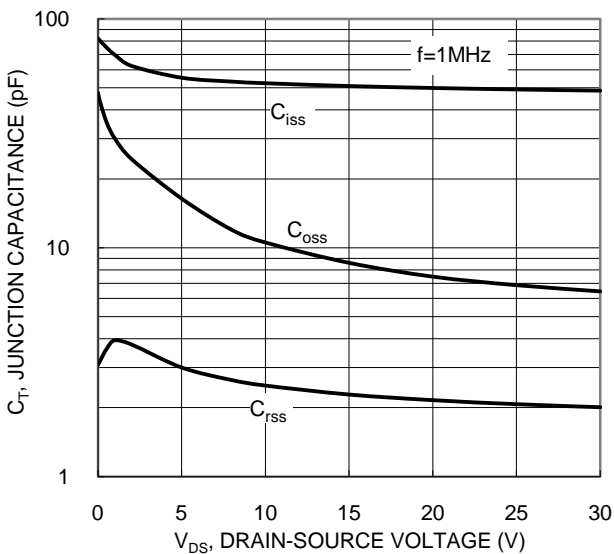


Figure 11. Typical Junction Capacitance

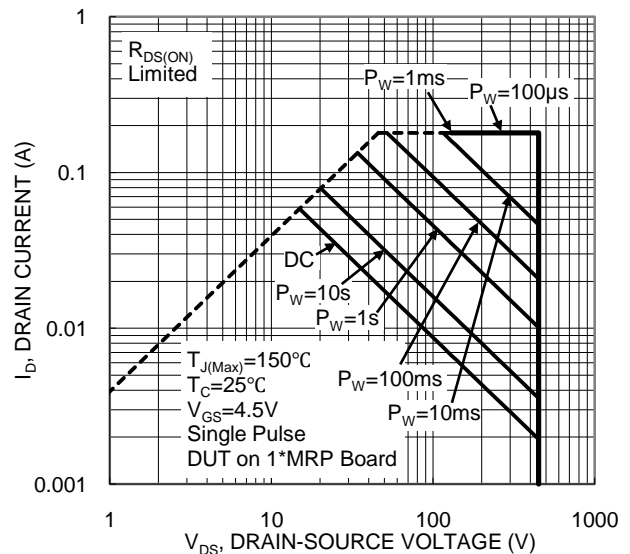


Figure 12. SOA, Safe Operation Area

P-CHANNEL HIGH VOLTAGE MOSFET

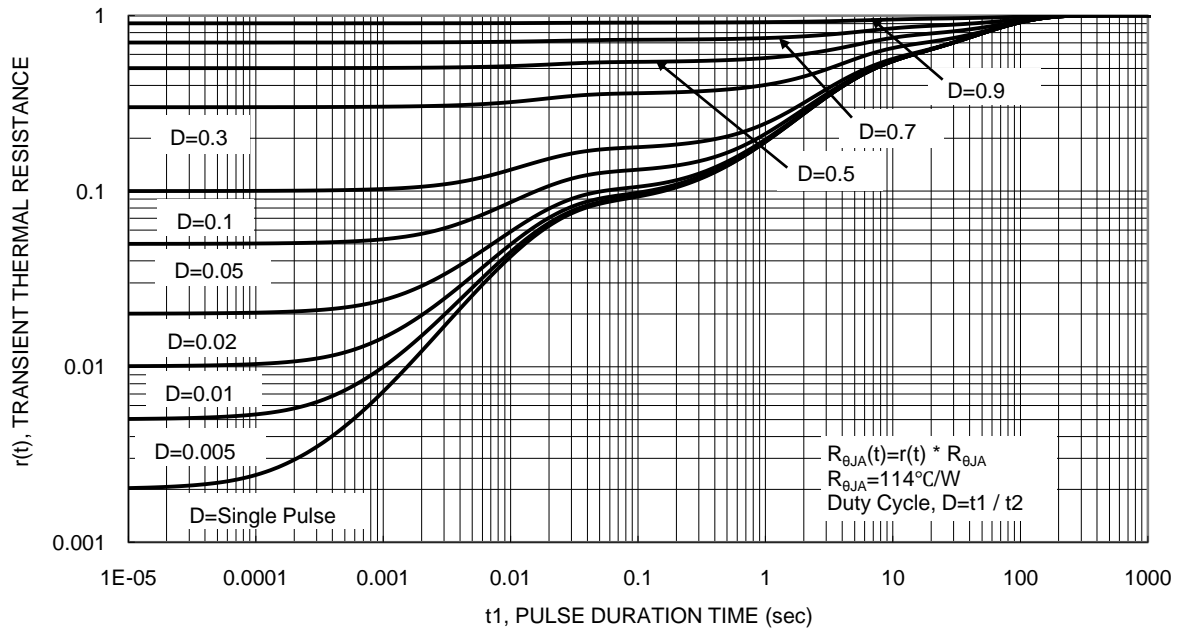
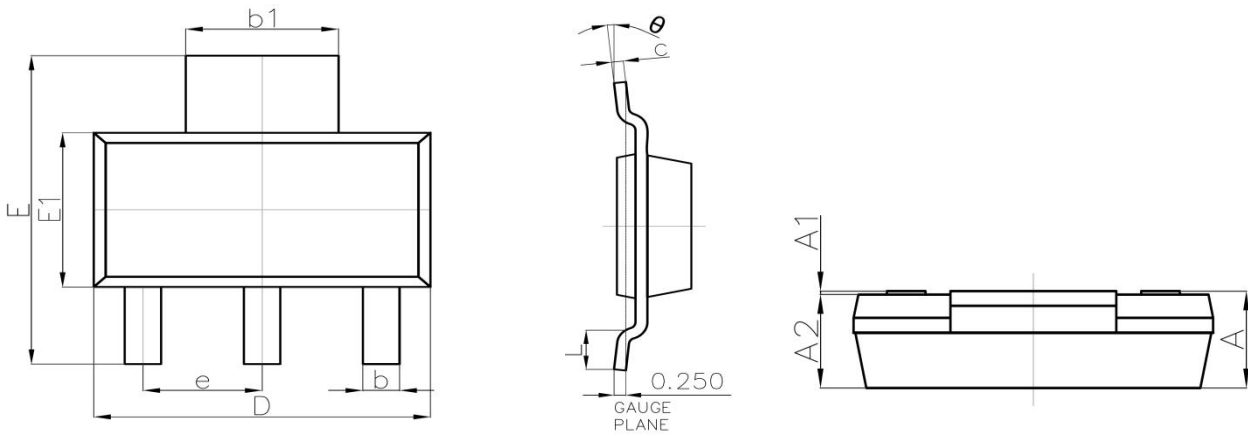
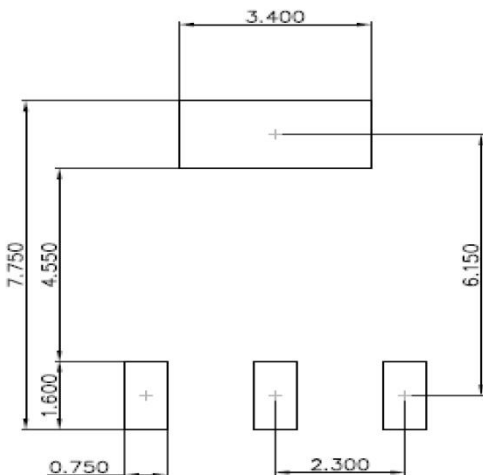


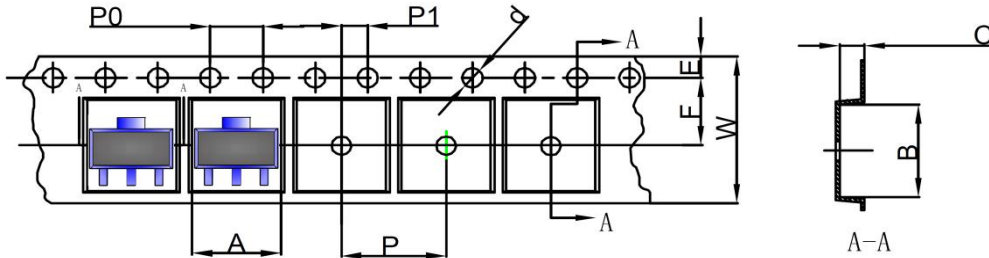
Figure 13. Transient Thermal Resistance

P-CHANNEL HIGH VOLTAGE MOSFET
SOT-223 Package Outline Dimensions


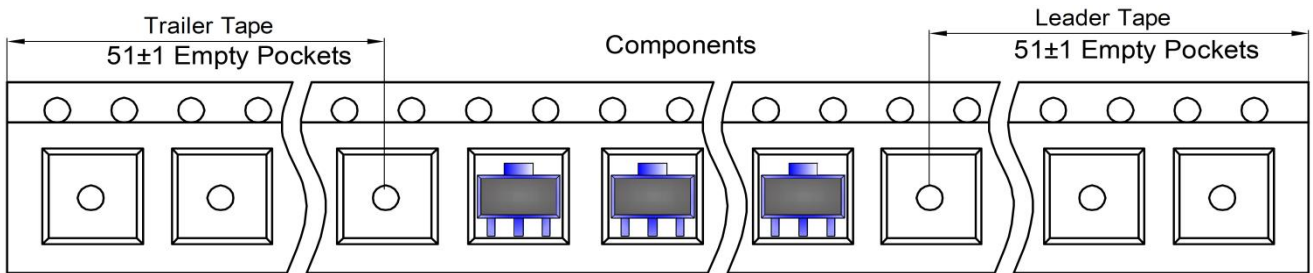
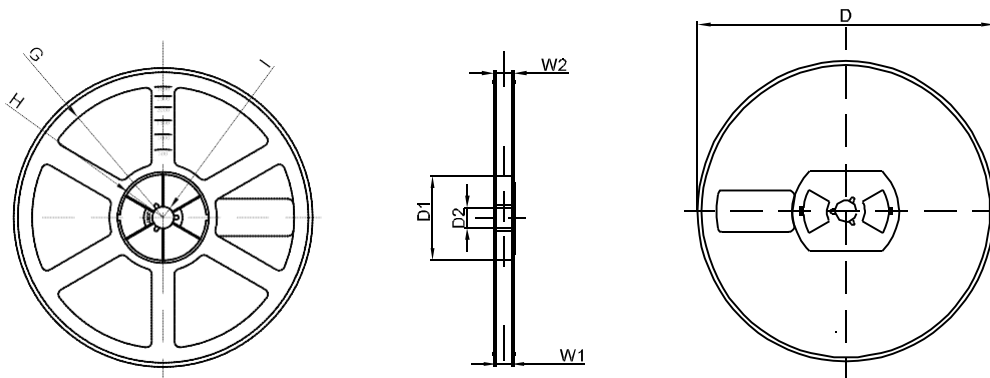
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	—	1.800	-----	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300(BSC)		0.091(BSC)	
L	0.750	-----	0.030	-----
θ	0°	10°	0°	10°

SOT-223 Suggested Pad Layout

Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

P-CHANNEL HIGH VOLTAGE MOSFET
SOT-223 Tape and Reel
SOT-223 Embossed Carrier Tape


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-223	6.765	7.335	1.88	Ø1.50	1.75	5.50	4.00	4.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-223 Tape Leader and Trailer

SOT-223 Reel


DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
13" DIA	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1