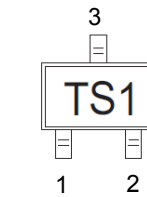


P-Channel Plastic-Encapsulate MOSFETS
PRIMARY CHARACTERISTICS

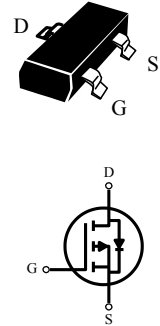
BV_{DSS}	$R_{DS(on)MAX}$	I_D
-20V	95m Ω @4.5V	-2.8A
	140m Ω @2.5V	-2A

FEATURES

- Super high dense cell trench design for low $R_{DS(on)}$.
- Rugged and reliable.
- Surface Mount package.

SOT-323
PACKAGE
MARKING


1. GATE
2. SOURCE
3. DRAIN


MECHANICAL DATA

- Case : Molded plastic,SOT-323
- Polarity : Shown above
- Terminals :Plated terminals, solderable per MIL-STD-750,Method 2026
- Epoxy : UL94-V0 rated flame retardant

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 8	V
Drain Current-Continuous ^a @ $T_A = 25^\circ\text{C}$ -Pulse ^b	I_D	-2.8	A
	I_{DM}	-8	A
Drain-Source Diode Forward Current ^a	I_S	-0.75	A
Maximum Power Dissipation ^a	P_D	$T_A=25^\circ\text{C}$ 1.25	W
		$T_A=75^\circ\text{C}$ 0.75	
Operating Junction and Storage Temperature Range	T_J, T_{STG}	- 55 to 150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Thermal Resistance,Junction-to-Ambient ^a	R_{thJA}	100	$^\circ\text{C/W}$
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Note

a. Surface Mounted on FR4 Board , $t \leq 10\text{sec}$.

b. Pulse width limited by maximum junction temperature.


ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V , I _D = -250uA	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -20V , V _{GS} = 0V			-1	uA
Gate-Body Leakage	I _{GSS}	V _{GS} = ±8V , V _{DS} = 0V			-100	nA
ON CHARACTERISTICS ^b						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250uA	-0.45	-0.65	-0.95	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = -4.5V , I _D = -2.8A		100	120	m-ohm
		V _{GS} = -2.5V , I _D = -2.0A		90	140	m-ohm
DRAIN-SOURCE DIODE CHARACTERISTICS ^b						
Diode Forward Voltage	V _{SD}	V _{GS} = 0V , I _S = -0.75A			-1.2	V
DYNAMIC CHARACTERISTICS ^c						
Input Capacitance	C _{ISS}	V _{DS} = -6V , V _{GS} = 0V f = 1.0MHz		664		pF
Output Capacitance	C _{OSS}			154		pF
Reverse Transfer Capacitance	C _{RSS}			129		pF
SWITCHING CHARACTERISTICS ^c						
Turn-On Delay Time	t _{D(ON)}	V _{DD} = -6V , I _D = -1A V _{GEN} = -4.5V R _L = 6 ohm R _{GEN} = 6 ohm		8.6		ns
Rise Time	t _r			3.0		ns
Turn-Off Delay Time	t _{D(OFF)}			39.2		ns
Fall Time	t _f			11.2		ns
Total Gate Charge	Q _g	V _{DS} = -6V I _D = -2.8A V _{GS} = -4.5V		6.72		nC
Gate-Source Charge	Q _{gs}			1.12		nC
Gate-Drain Charge	Q _{gd}			1.04		nC

Note

b. Pulse Test Pulse width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

c. Guaranteed by design, not subject to production testing.

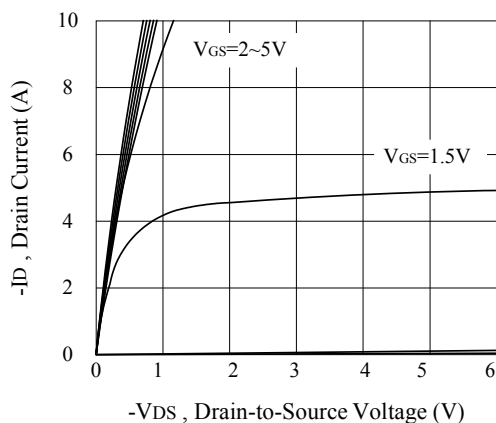


Figure 1. Output Characteristics

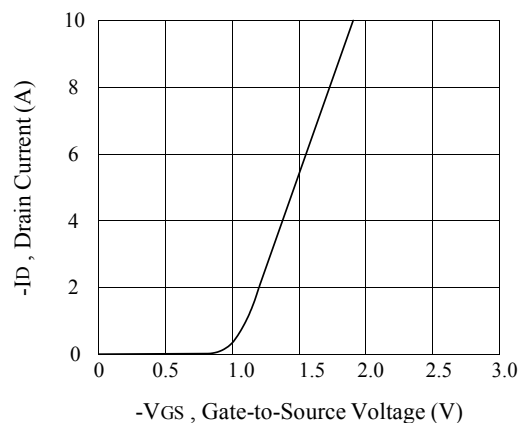


Figure 2. Transfer Characteristics

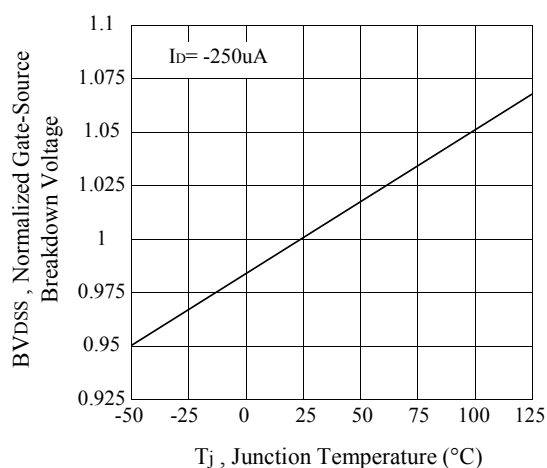


Figure 3. Breakdown Voltage Variation with Temperature

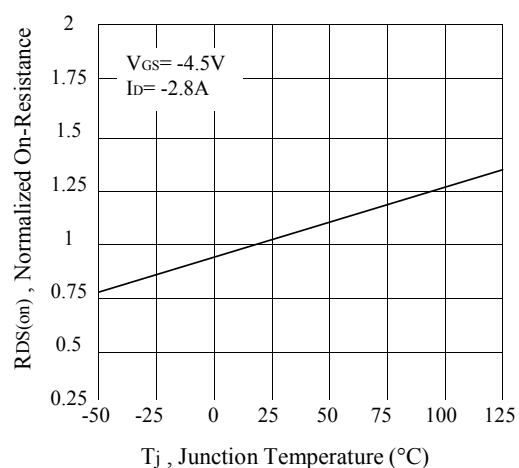


Figure 4. On-Resistance Variation with Temperature

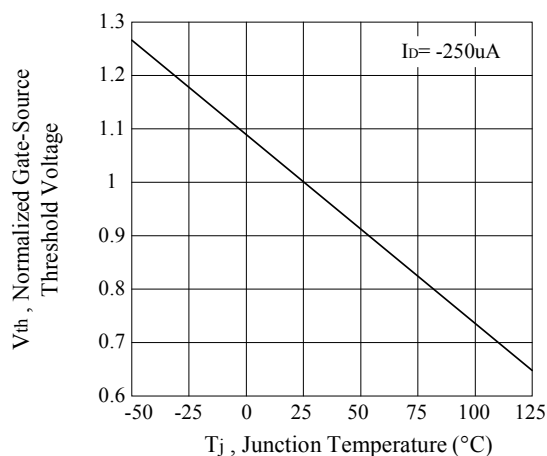


Figure 5. Gate Threshold Variation with Temperature

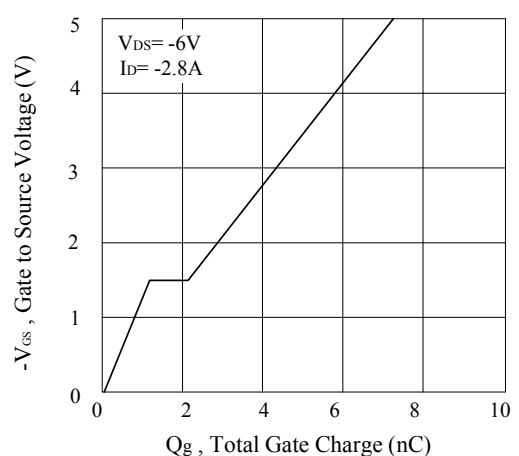
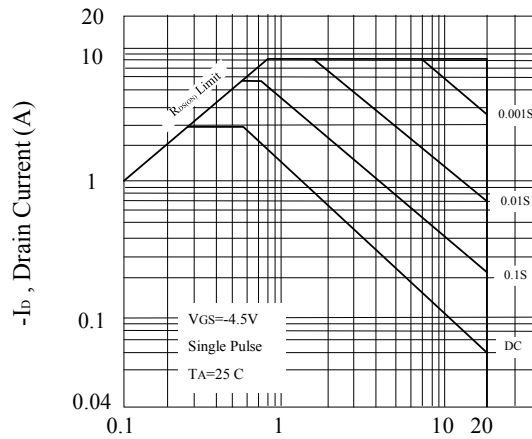


Figure 6. Gate Charge

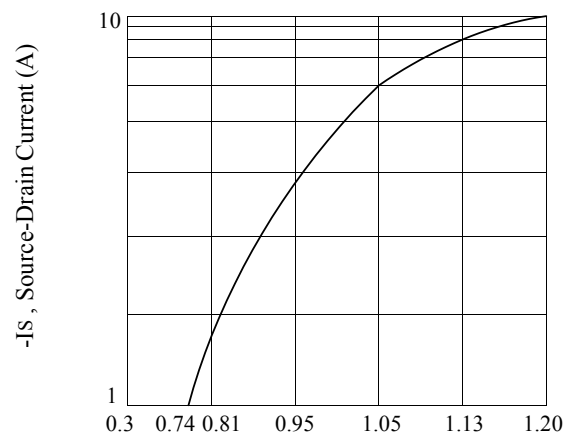


P-Channel Plastic-Encapsulate MOSFETS



-VDS, Drain-Source Voltage (V)

Figure 7. Maximum Safe Operating Area



-VSD, Body Diode Forward Voltage (V)

Figure 8. Body Diode Forward Voltage Variation with Source Current

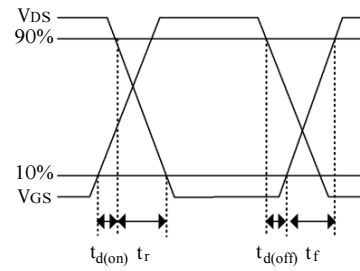
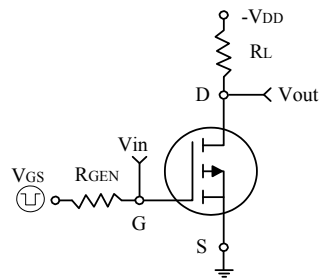


Figure 9. Switching Test Circuit and Switching Waveforms

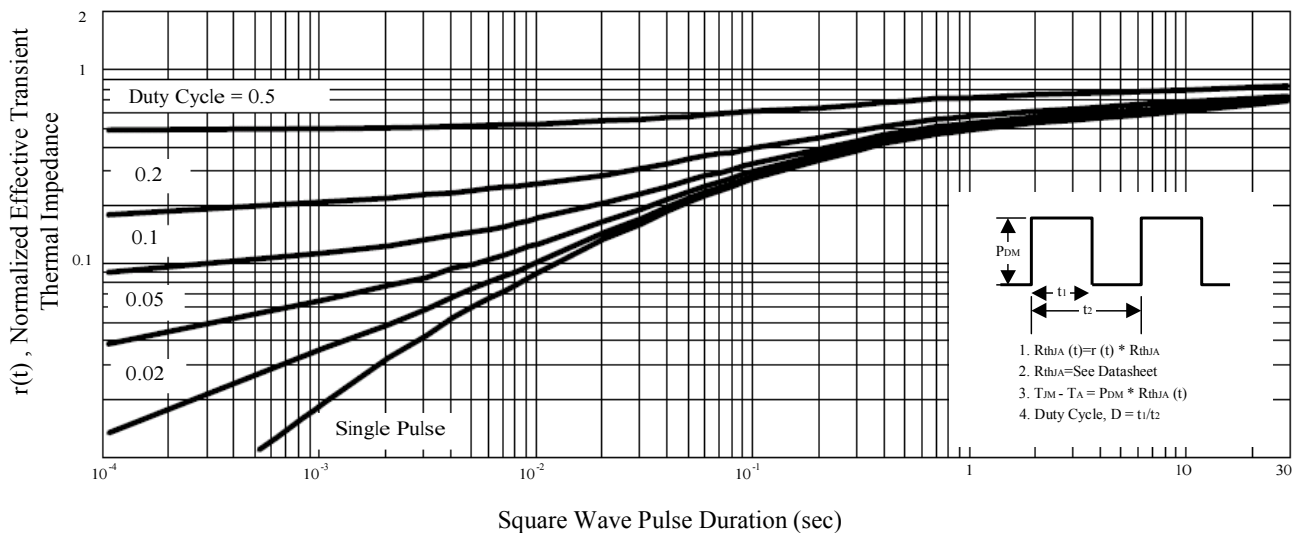
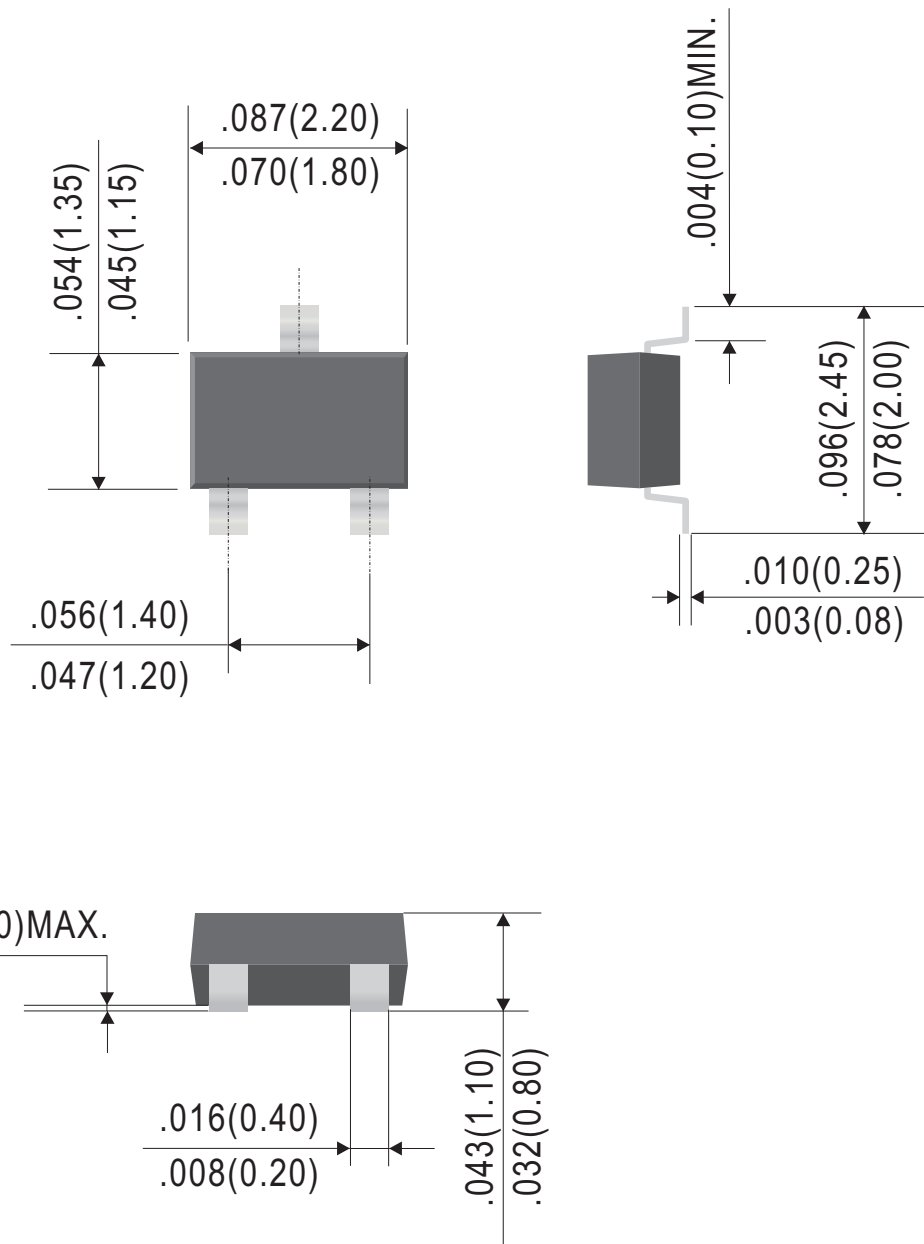


Figure 10. Normalized Thermal Transient Impedance Curve



Outline Drawing

SOT-323



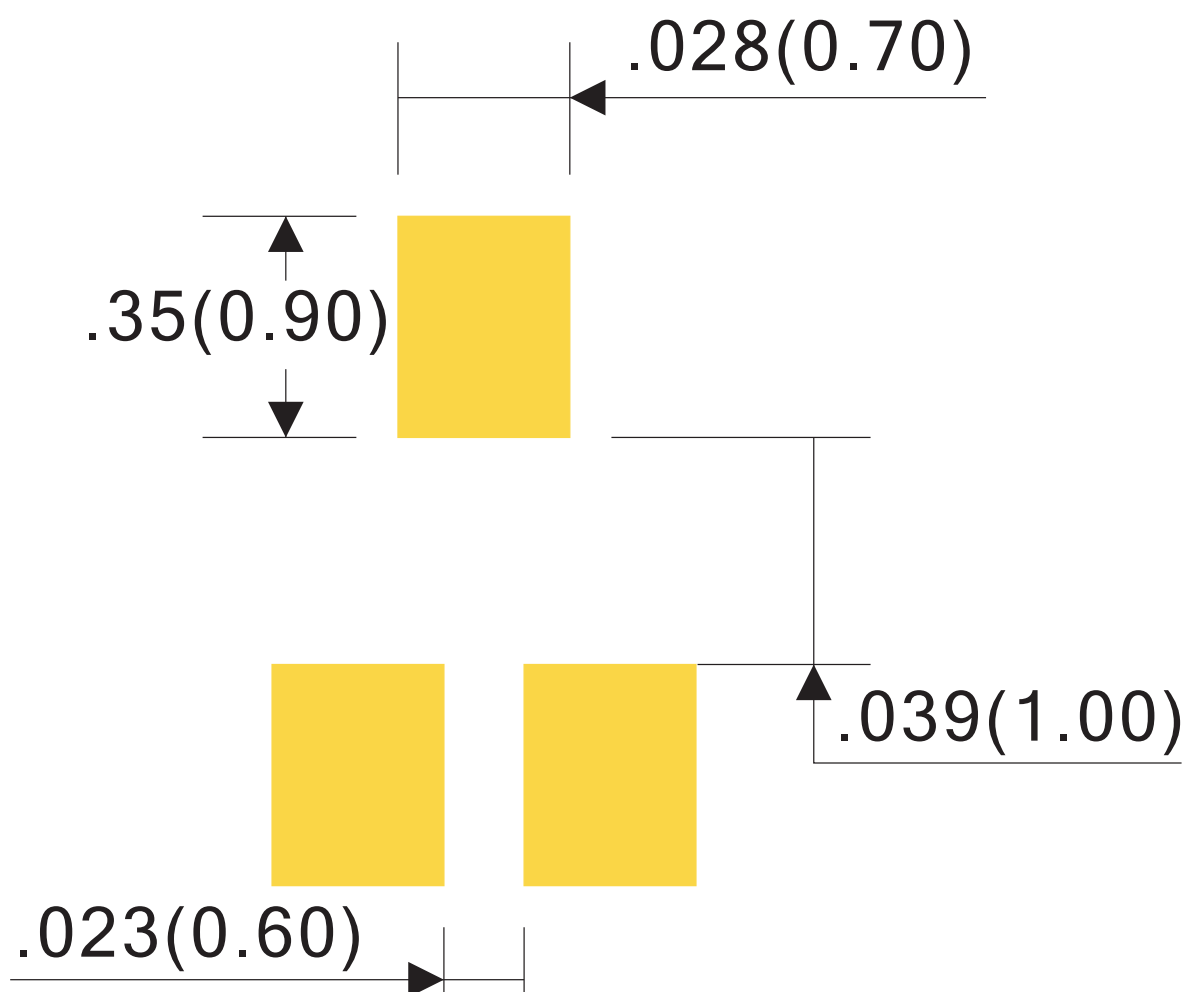
Dimensions in inches and (millimeters)

Rev.D



Suggested Soldering Pad Layout

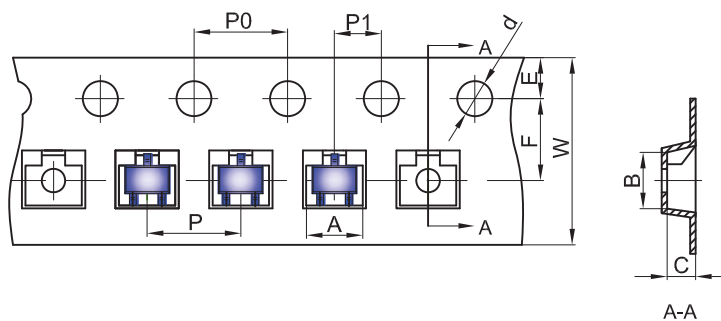
SOT-323



Dimensions in inches and (millimeters)

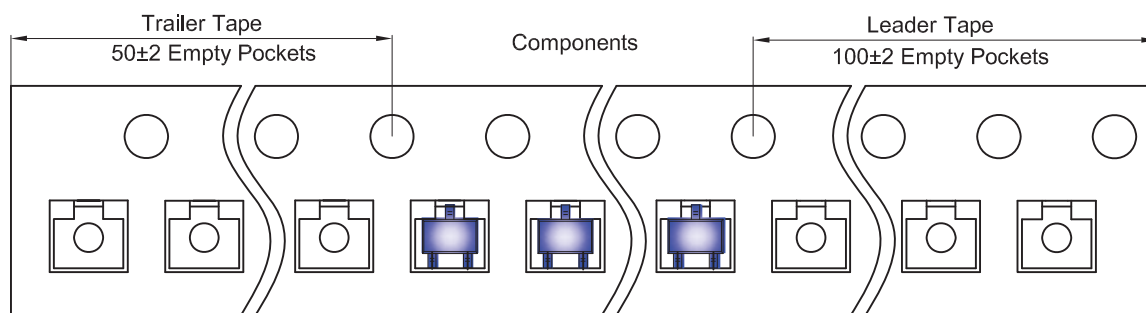
Rev.A

SOT-323 Embossed Carrier Tape

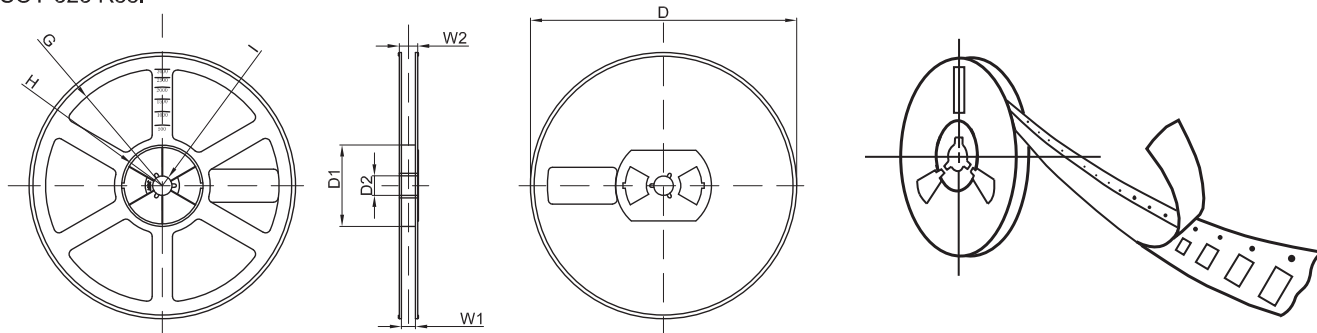


Dimensions are in millimeter											
Pkg type	A	B	C	d	E	F	P0	P	P1	W	
SOT-323	2.25	2.55	1.19	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00	
(Tolerance)	+/-0.05	+/-0.05	+/-0.05	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+0.3/-0.1	

SOT-323 Tape Leader and Trailer



SOT-323 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	+/-2	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1

Ordering Information:

Device PN	Packing
SE2101GN-T ⁽¹⁾ G ⁽²⁾ -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

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