



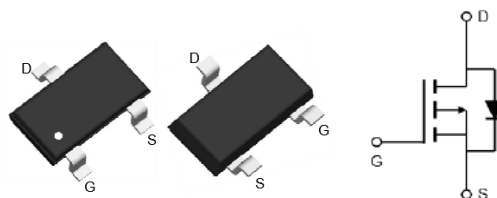
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PRIMARY CHARACTERISTICS

BV _{DSS}	R _{DS(on)} MAX	I _D
-30V	58mΩ@V _{GS} =-10V	-4A
	72mΩ@V _{GS} =-4.5V	
	86mΩ@V _{GS} =-2.5V	

SCHEMATIC DIAGRAM

SOT-23 PACKAGE



GENERAL DESCRIPTION

- Load Switch
- PWM

MECHANICAL DATA

- Case : Molded plastic,SOT-23
- 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°C unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V _{DSS}	-30	V
Gate-Source Voltage		V _{GSS}	±12	V
Drain Current (Continuous) *AC	T _A =25°C	I _D	-4	A
	T _A =70°C		-3.2	
Drain Current (Pulse) *B		I _{DM}	-15	A
Power Dissipation	T _A =25°C	P _D	1.25	W
Operating Temperature/ Storage Temperature		T _J /T _{STG}	-55~150	°C

Thermal Resistance Ratings

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient	t ≤ 5s	R _{thJA}	80	100	°C/W


Electrical Characteristics @T_A=25°C unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V	--	--	-1	μA
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _{DS} = -250μA	-0.5	-0.9	-1.5	V
Gate Leakage Current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V	--	--	±100	nA
Drain-Source On-state Resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -4A	--	46	58	mΩ
	R _{DS(on)}	V _{GS} = -4.5V, I _D = -3.5A	--	50	72	mΩ
	R _{DS(on)}	V _{GS} = -2.5V, I _D = -1A	--	63	86	mΩ
Diode Forward Voltage	V _{SD}	I _{SD} = -1A , V _{GS} = 0V	--	--	-1.2	V
Diode Forward Current	I _S	T _A = 25°C	--	--	-2	A
Switching						
Total Gate Charge	Q _g	V _{GS} = -4.5V, V _{DS} = -15V, I _D = -4A	--	9	--	nC
Gate-Source Charge	Q _{gs}		--	1	--	nC
Gate-Drain Charge	Q _{gd}		--	3	--	nC
Turn-on Delay Time	t _{d (on)}	V _{DD} = -15V, R _G = 6Ω I _D = -4A, V _{GS} = -10V	--	9	--	ns
Turn-on Rise Time	t _r		--	3	--	ns
Turn-off Delay Time	t _{d(off)}		--	66	--	ns
Turn-Off Fall Time	t _f		--	16	--	ns
Dynamic						
Input Capacitance	C _{iss}	V _{GS} =0V,V _{DS} = -15V,f= 1.0MHz	--	945	--	pF
Output Capacitance	C _{oss}		--	120	--	pF
Reverse Transfer Capacitance	C _{rss}		--	80	--	pF

A: The value of R_{θJA} is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C. The value in any given application depends on the user's specific board design.

B: Repetitive rating, pulse width limited by junction temperature.

C: The current rating is based on the t_≤ 10s junction to ambient thermal resistance rating.



Typical Performance Characteristics (T_J = 25 °C, unless otherwise noted)

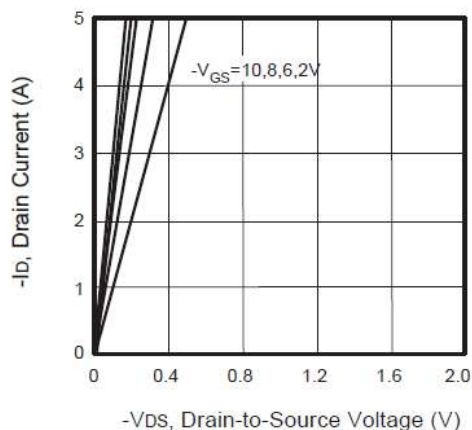


Figure 1. Output Characteristics

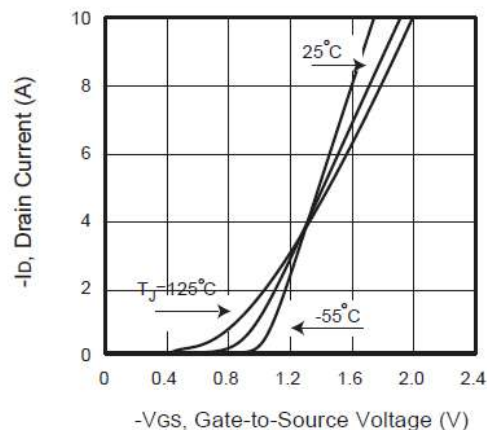


Figure 2. Transfer Characteristics

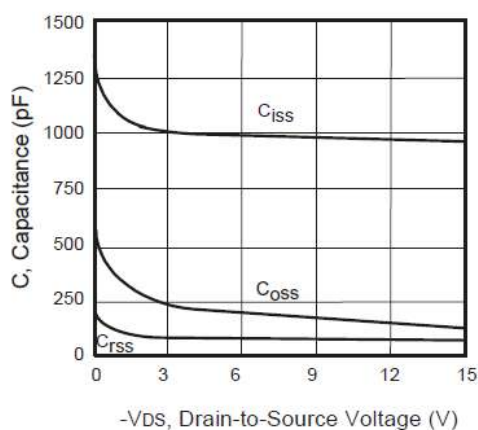


Figure 3. Capacitance

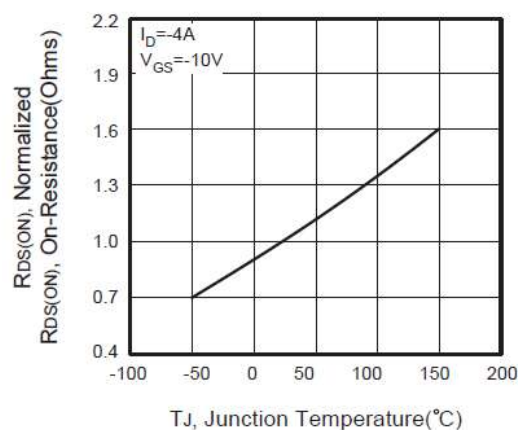


Figure 4. On-Resistance Variation with Temperature

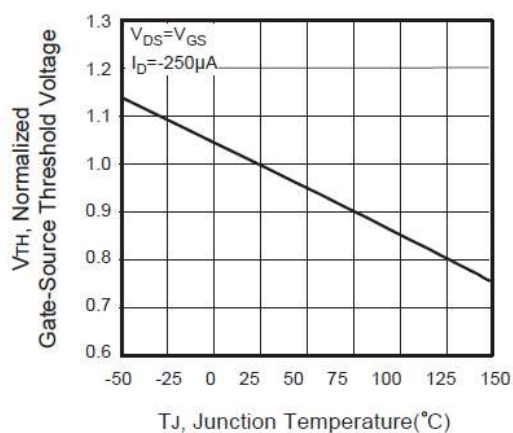


Figure 5. Gate Threshold Variation with Temperature

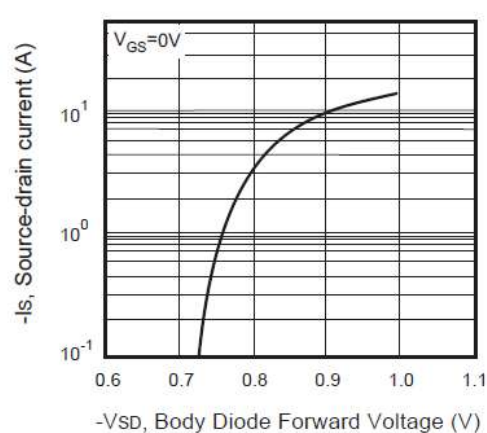


Figure 6. Body Diode Forward Voltage Variation with Source Current

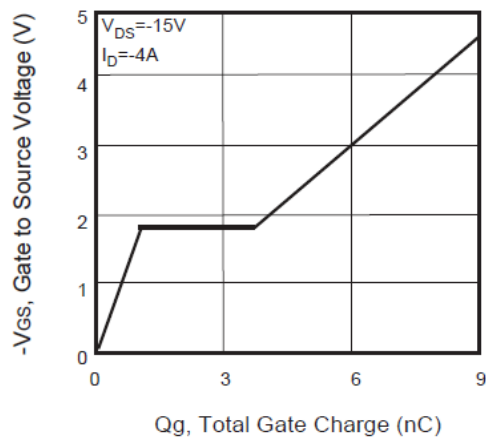


Figure 7. Gate Charge

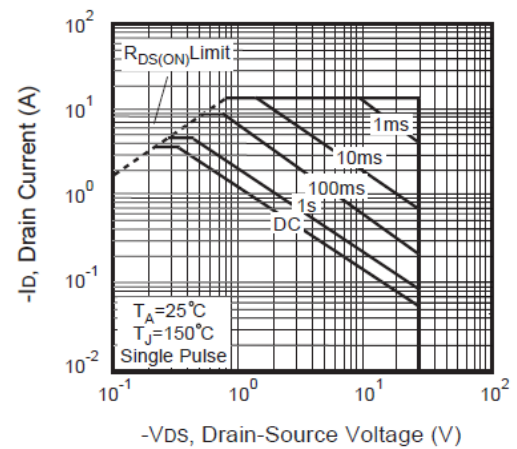


Figure 8. Maximum Safe Operating Area

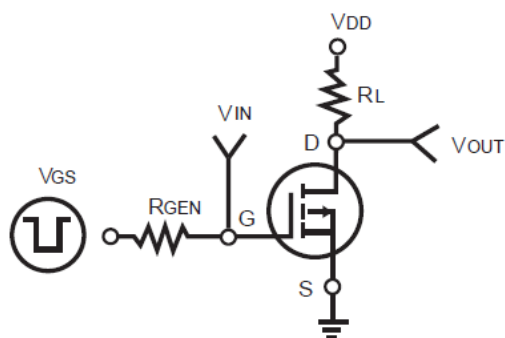


Figure 9. Switching Test Circuit

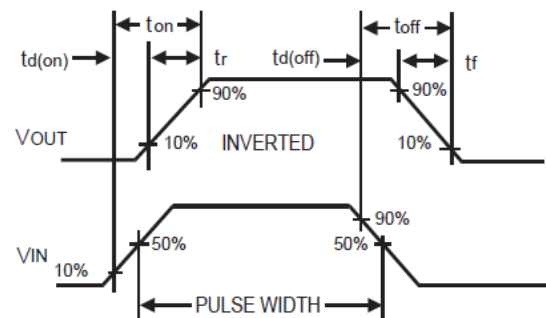


Figure 10. Switching Waveforms

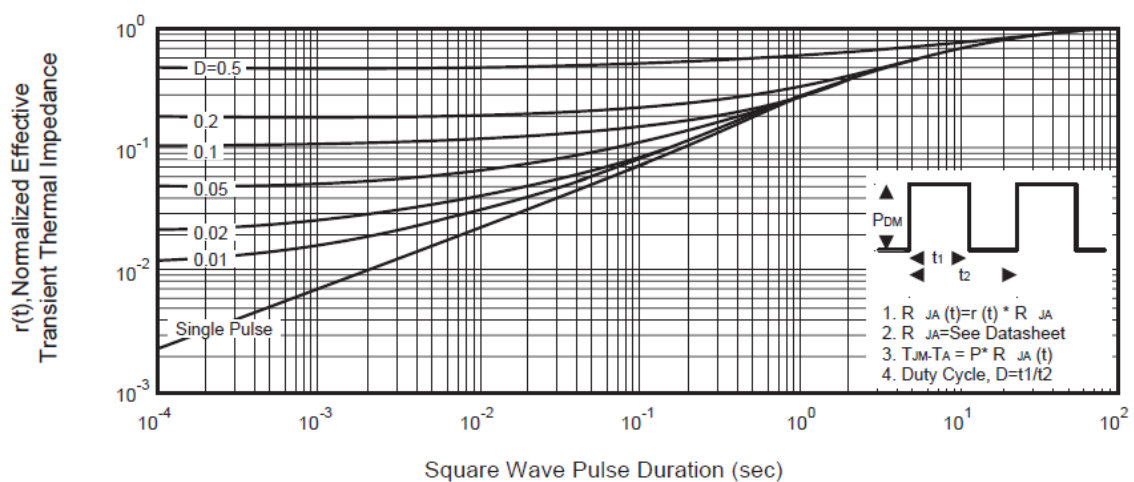
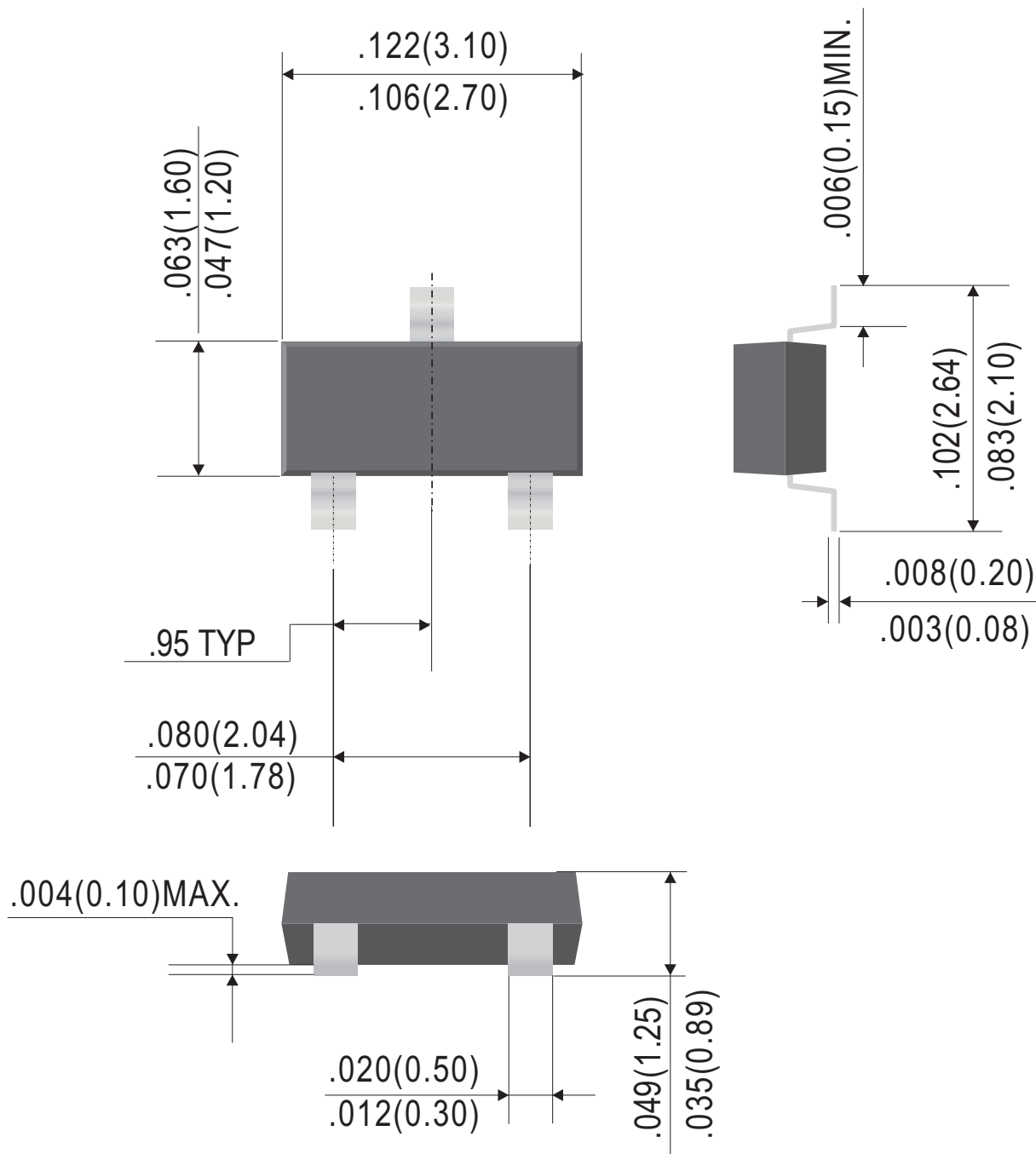


Figure 11. Normalized Thermal Transient Impedance Curve



Outline Drawing

SOT-23



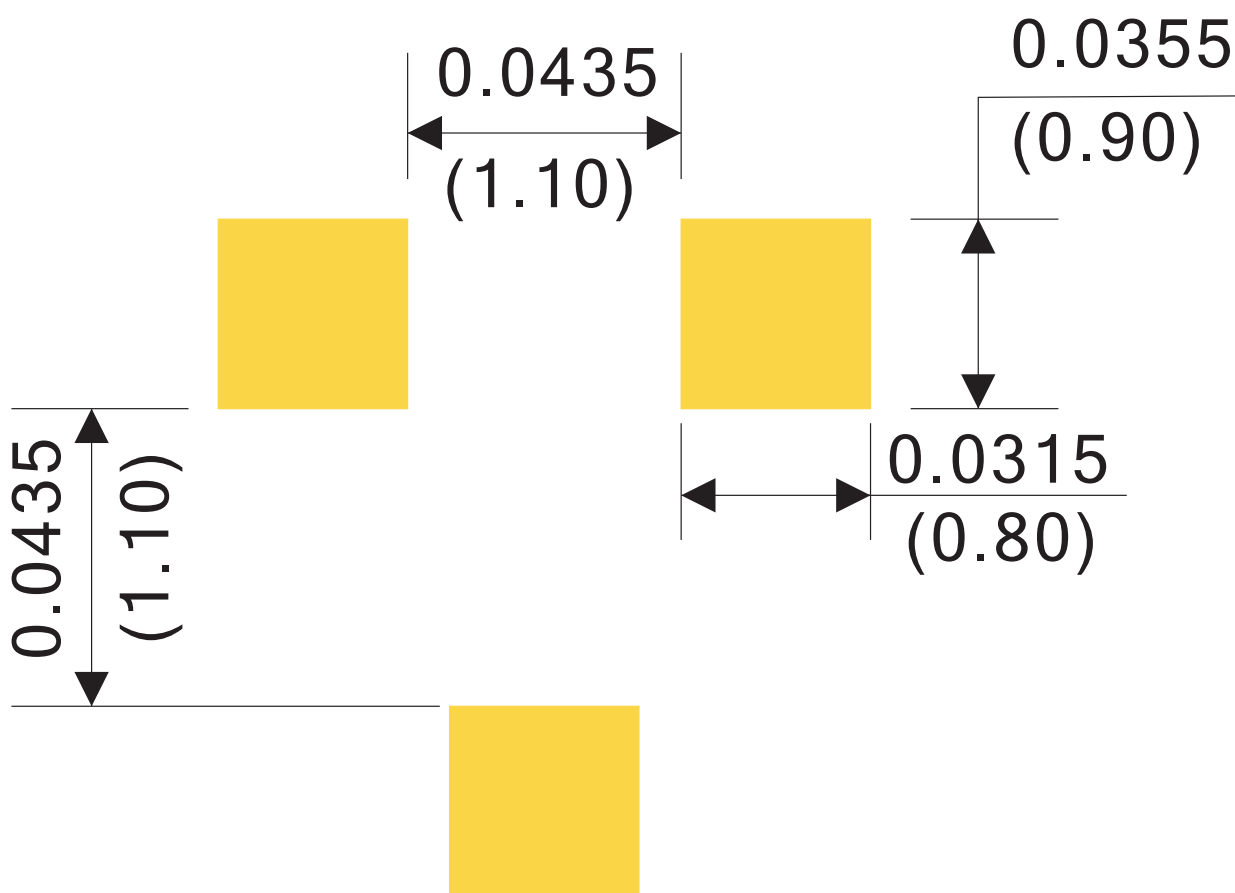
Dimensions in inches and (millimeters)

Rev.E



Suggested Soldering Pad Layout

SOT-23

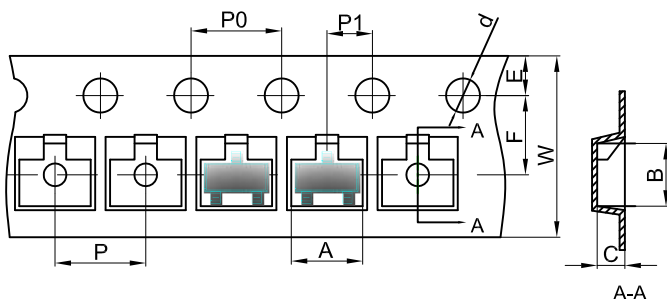


Dimensions in inches and (millimeters)

Rev.A



SOT-23 Embossed Carrier Tape

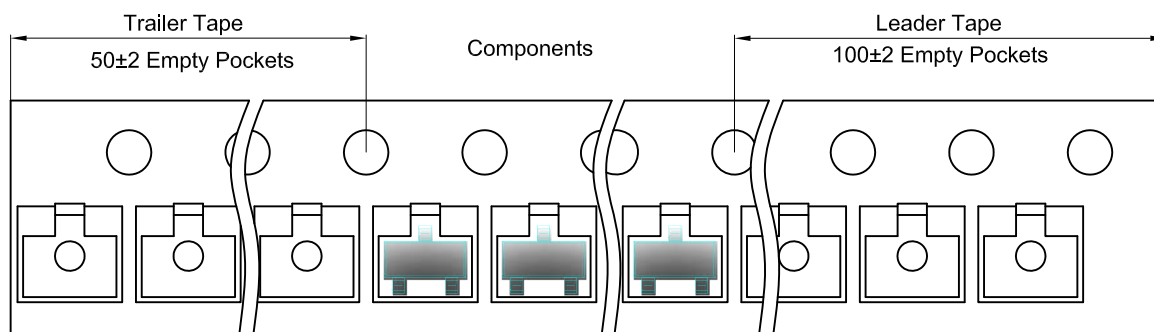


Packaging Description:

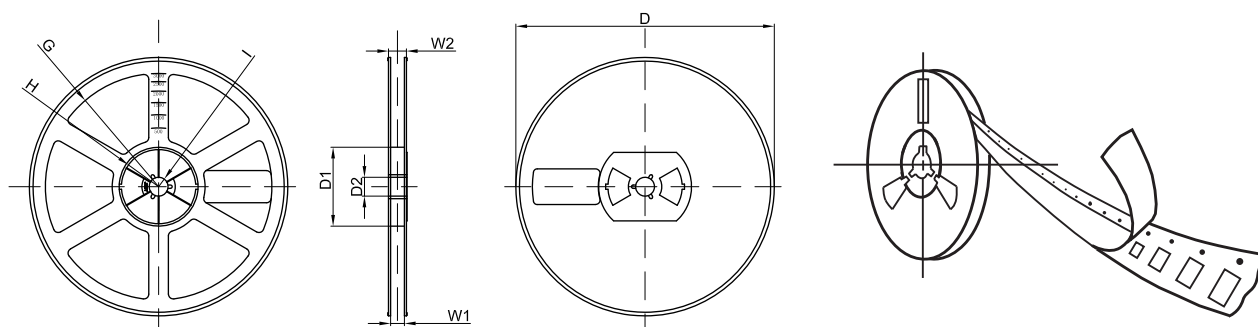
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 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



Ordering Information:

Device PN	Marking	Packing
SE3401LT -T ⁽¹⁾ H ⁽²⁾ -WS	R1	Tape&Reel: 3 Kpcs/Reel

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

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

(3) WS : Willas brand abbreviation, Label Type does not display

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