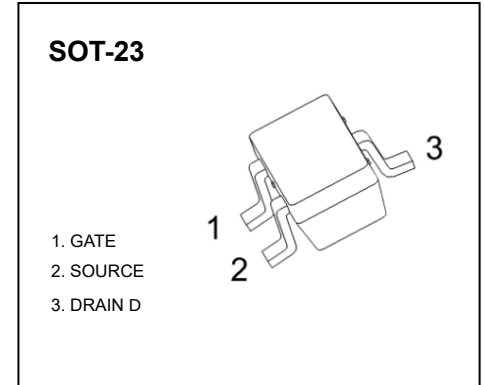


JTD2312 N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	11mΩ@ 10V	6A
	18mΩ@ 2.5V	
	15mΩ@ 4.5V	



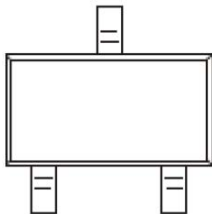
FEATURES

- TrenchFET Power MOSFET

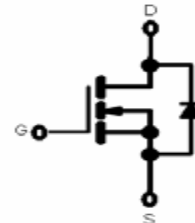
APPLICATION

- Load Switch for Portable Applications

MARKING:



Equivalent Circuit



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

Symbol Para	meter	Value	Unit
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 10	V
I_D	Continuous Drain Current (note 1)	6	A
I_{DM}	Collector Current-Pulse(Note3)	22	A
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient (note 2)	313	$^{\circ}\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$
T_L	Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	260	$^{\circ}\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25^{\circ}\text{C}$ unless otherwise specified

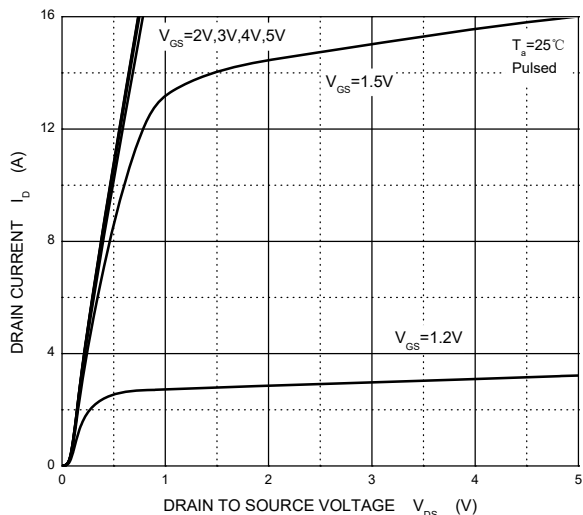
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage (note 3)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45	0.65	1.0	V
Drain-source on-resistance(note 3)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 4A$		11	15	$m\Omega$
		$V_{GS} = 2.5V, I_D = 2A$		18	25	$m\Omega$
		$V_{GS} = 4.5V, I_D = 3A$		15	20	$m\Omega$
Forward tranconductance(note 3)	g_{FS}	$V_{DS} = 10V, I_D = 5A$	20			S
Diode forward voltage (note 3)	V_{SD}	$I_S = 6A, V_{GS} = 0V$			1.2	V
DYNAMIC PARAMETERS (note 4)						
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		970		pF
Output Capacitance	C_{oss}			158		pF
Reverse Transfer Capacitance	C_{rss}			145		pF
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		4		Ω
SWITCHING PARAMETERS (note 4)						
Turn-on delay time	$t_{d(on)}$	$V_{GEN} = 4.5V, V_{DD} = 10V$ $I_D = 4.5A, R_g = 6\Omega$ $R_L = 0.4\Omega$		12		ns
Turn-on rise time	t_r			10		ns
Turn-off delay time	$t_{d(off)}$			65		ns
Turn-off fall time	t_f			20		ns
Total Gate Charge	Q_g	$V_{DS} = 10V, V_{GS} = 4.5V$ $I_D = 4.5A$			32	nC
Gate-Source Chage	Q_{gs}			2.5		nC
Gage-Drain Charge	Q_{gd}			6.5		nC

Notes :

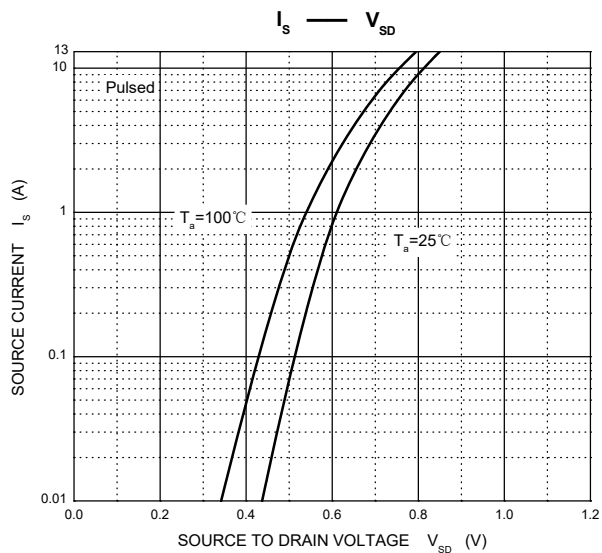
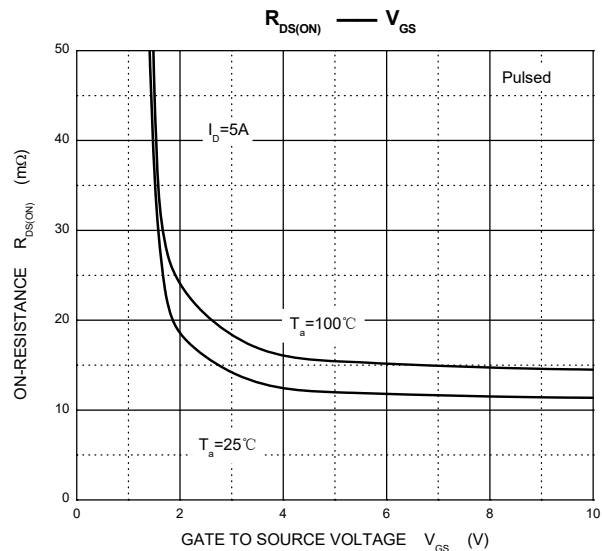
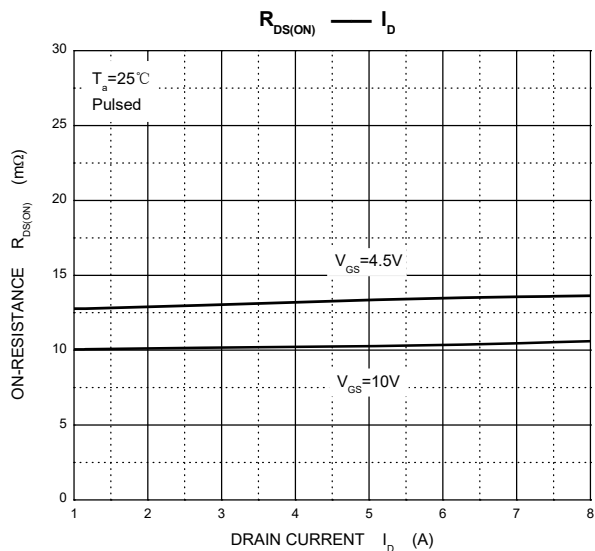
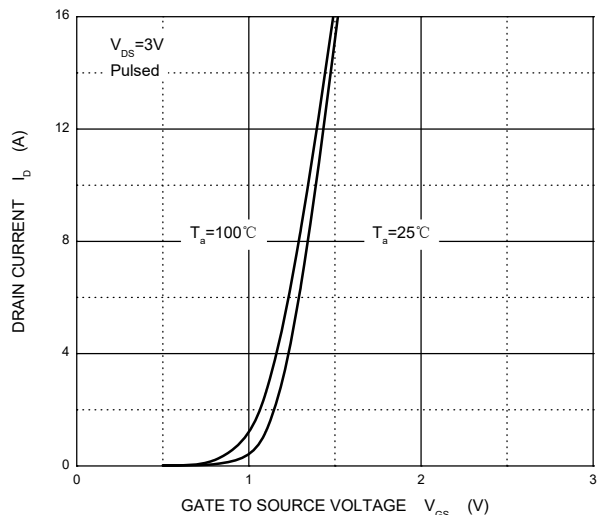
- 1.Surface mounted on FR4 board using 1 square inch pad size,1oz copper.
- 2.Surface mounted on FR4 board using the minimum pad size,1oz copper.
3. Pulse test : Pulse width=300 μs , duty cycle $\leq 2\%$.
4. These parameters have no way to verify.

Typical Characteristics

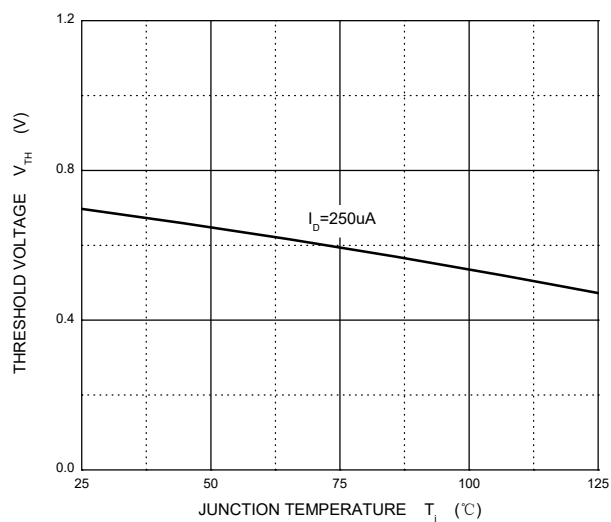
Output Characteristics



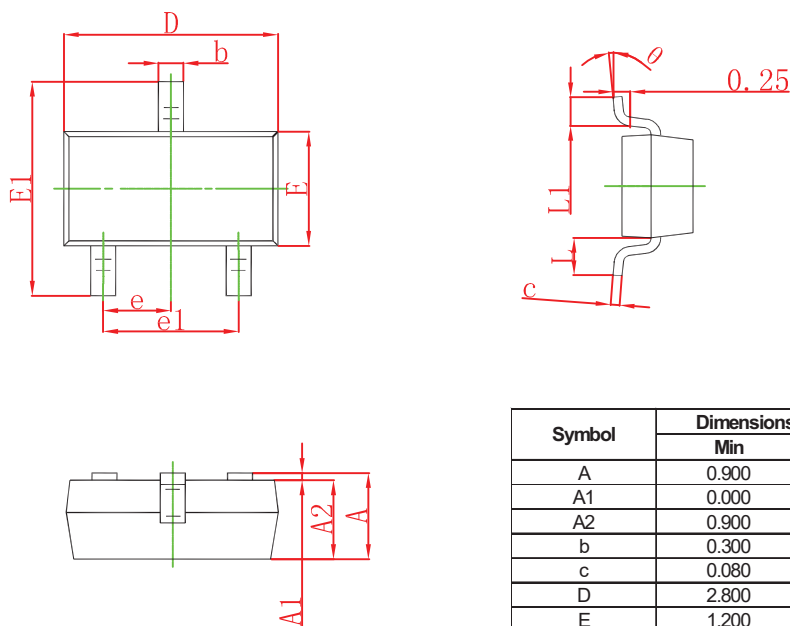
Transfer Characteristics



Threshold Voltage

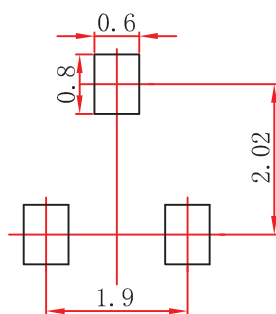


SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
v	0°	8°	0°	8°

SOT-23 Suggested Pad Layout

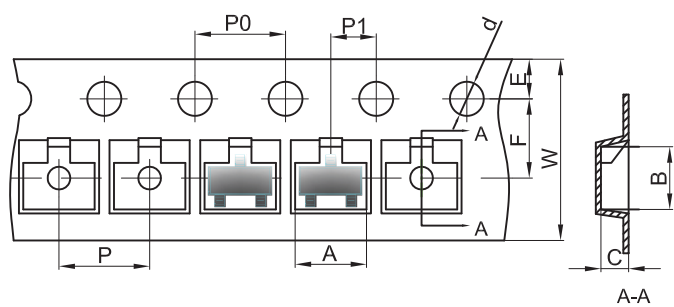


- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

NOTICE

JTD reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JTD does not assume any liability arising out of the application or use of any product described herein.

SOT-23 Embossed Carrier Tape

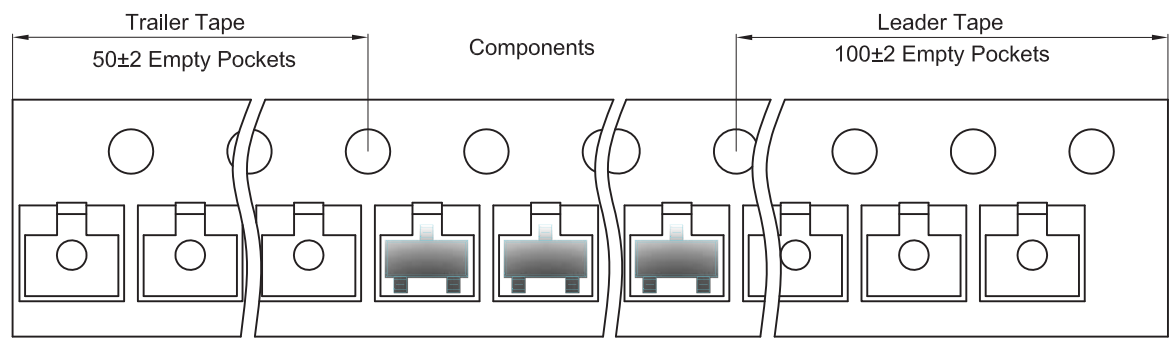


Packaging Description:

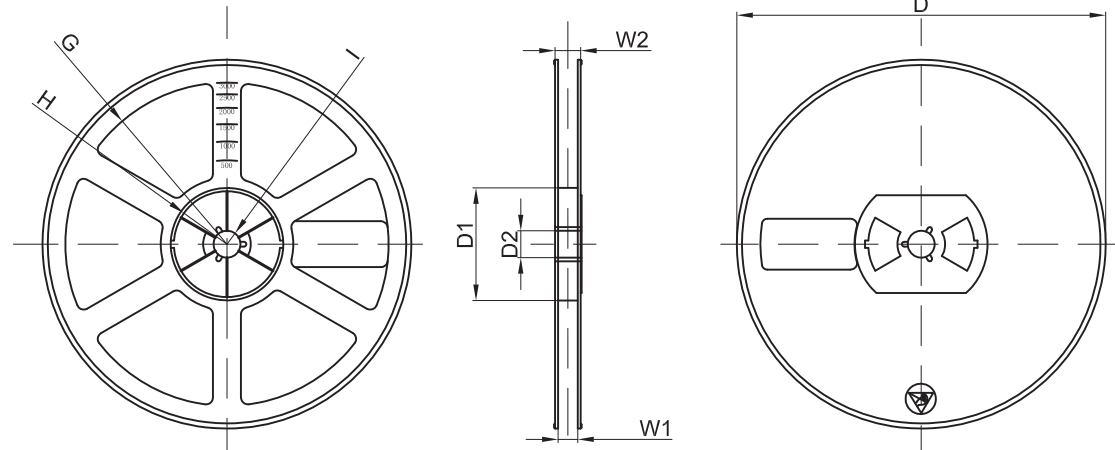
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in 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

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	