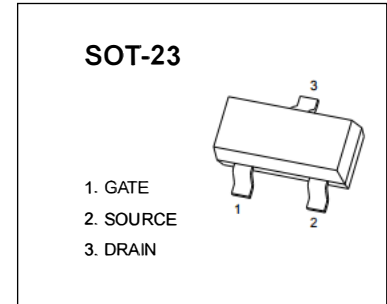


SHENZHEN JTD ELECTRONICS CO.,LTD

SOT-23 Plastic-Encapsulate MOSFETS

JTD2301B P-Channel 20-V(D-S) MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-20V	72m Ω @-4.5V	-2.8 A
	99m Ω @-2.5V	



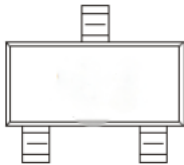
FEATURE

- TrenchFET Power MOSFET

APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

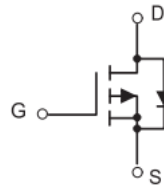
MARKING



A1SHB=Device code

Solid dot = Green molding compound device,if none,
the normal device

Equivalent Circuit



Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current	I_D	-2.8	A
Pulsed Drain Current	I_{DM}	-10	
Continuous Source-Drain Diode Current	I_S	-0.72	
Maximum Power Dissipation	P_D	0.4	W
Thermal Resistance from Junction to Ambient($t \leq 5s$)	$R_{\theta JA}$	312.5	$^{\circ}\text{C/W}$
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55 ~ +150	$^{\circ}\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS

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

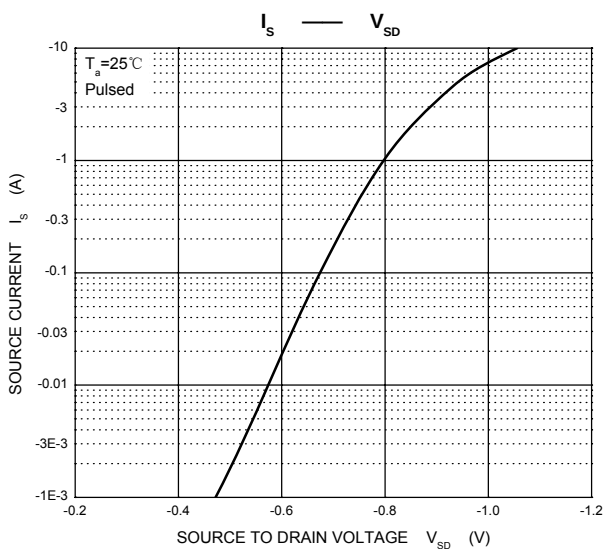
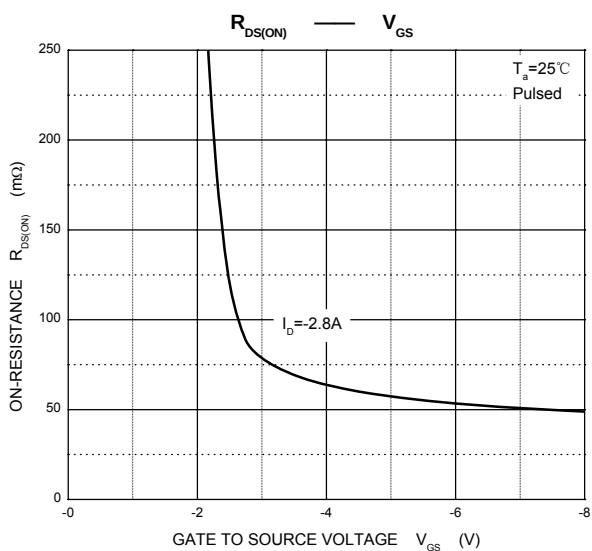
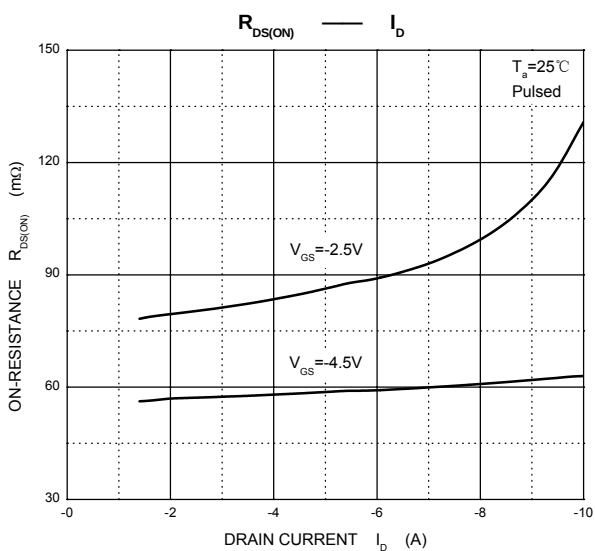
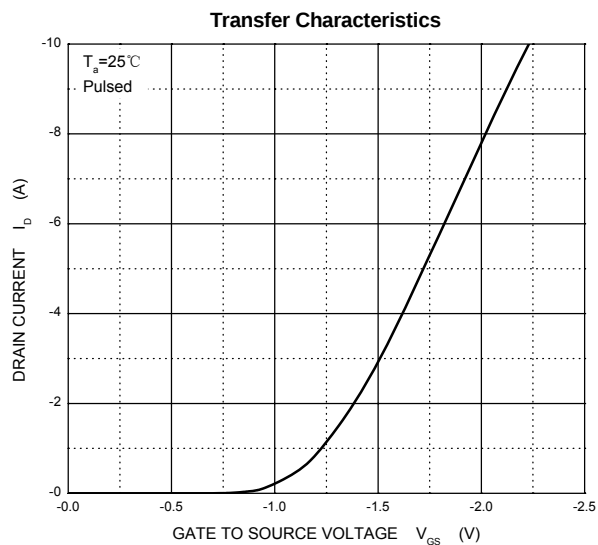
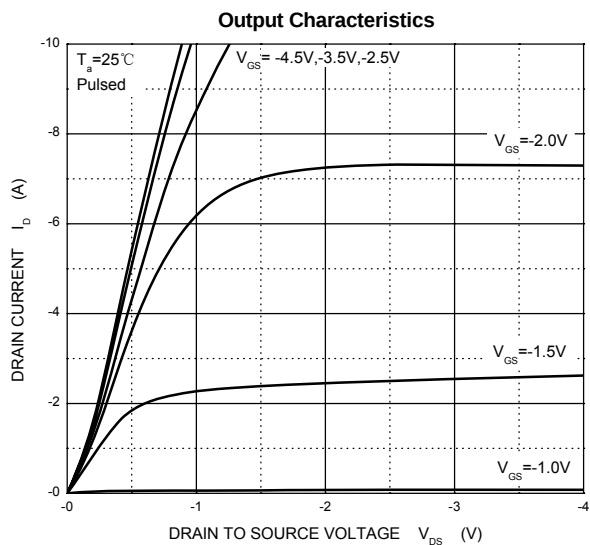
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-20			V
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.45	0.65	-0.9	
Gate-source leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Drain-source on-state resistance ^a	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1.0A		72	94	mΩ
		V _{GS} =-2.5V, I _D =-1.0A		99	129	
Forward transconductance ^a	g _{fs}	V _{DS} =-5V, I _D =-2.8A		6.5		S
Dynamic ^b						
Input capacitance	C _{iss}	V _{DS} =-10V,V _{GS} =0V,f =1MHz		405		pF
Output capacitance	C _{oss}			75		
Reverse transfer capacitance	C _{rss}			55		
Total gate charge	Q _g	V _{DS} =-10V,V _{GS} =-4.5V,I _D =-2.8A		5.5	10	nC
		V _{DS} =-10V,V _{GS} =-2.5V,I _D =-2.8A		3.3	6	
Gate-source charge	Q _{gs}			0.7		
Gate-drain charge	Q _{gd}			1.3		
Gate resistance	R _g	f =1MHz		6.0		Ω
Turn-on delay time	t _{d(on)}	V _{DD} =-10V, R _L =10Ω, I _D =-1A, V _{GEN} =-4.5V,R _g =1Ω		11	20	ns
Rise time	t _r			35	60	
Turn-off delay time	t _{d(off)}			30	50	
Fall time	t _f			10	20	
Drain-source body diode characteristics						
Continuous source-drain diode current	I _S	T _C =25°C			-1.3	A
Pulse diode forward current ^a	I _{SM}				-10	
Body diode voltage	V _{SD}	I _S =-0.7A		-0.8	-1.2	V

Notes :

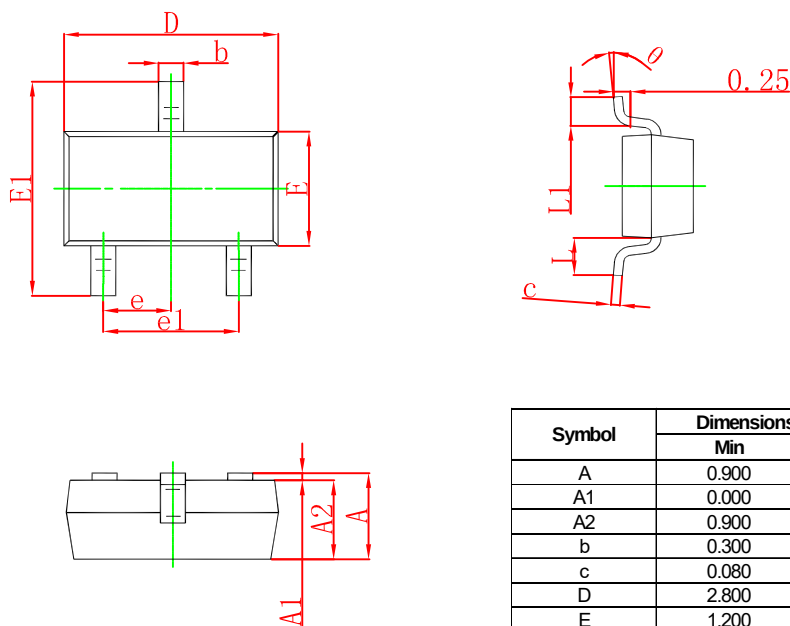
a.Pulse Test : Pulse Width < 300 μs , Duty Cycle $\leq 2\%$.

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

Typical Characteristics

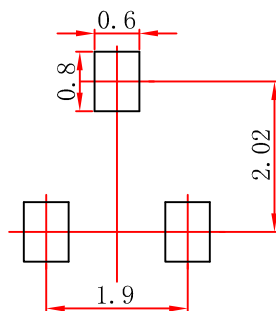


SOT-23 Package Outline Dimensions



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
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout

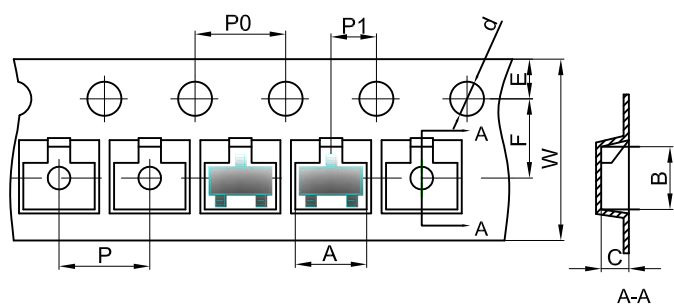


Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05 mm.
 3. The pad layout is for reference purposes only.

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.

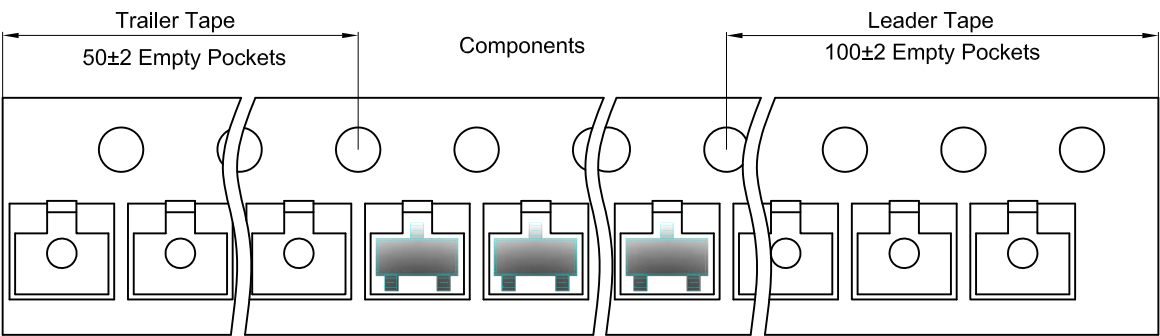
SOT-23 Embossed Carrier Tape



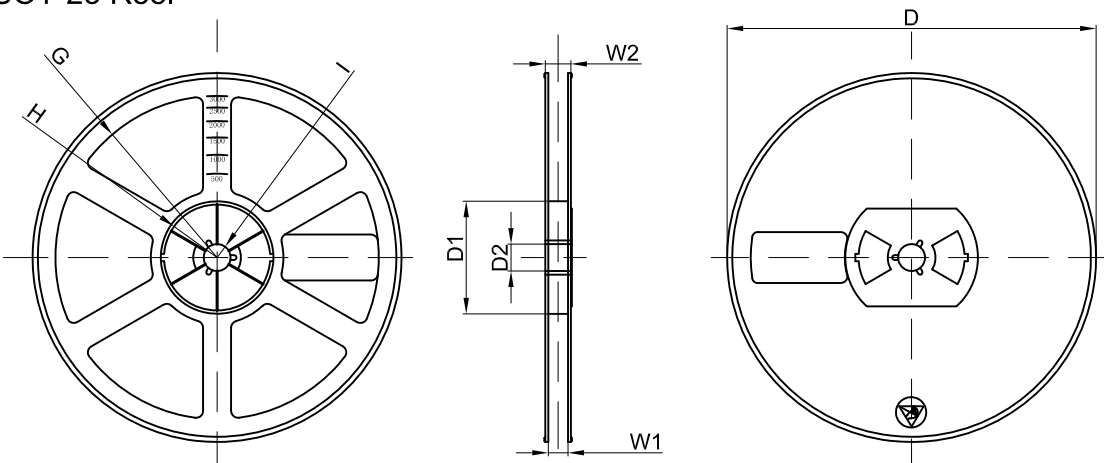
Packaging Description:
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. 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	45000pcs	203×203×195	180000pcs	438×438×220	