

30V N-Channel MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
30V	0.75Ω@10V	300mA
	0.88Ω@4V	
	1.15Ω@2.5V	

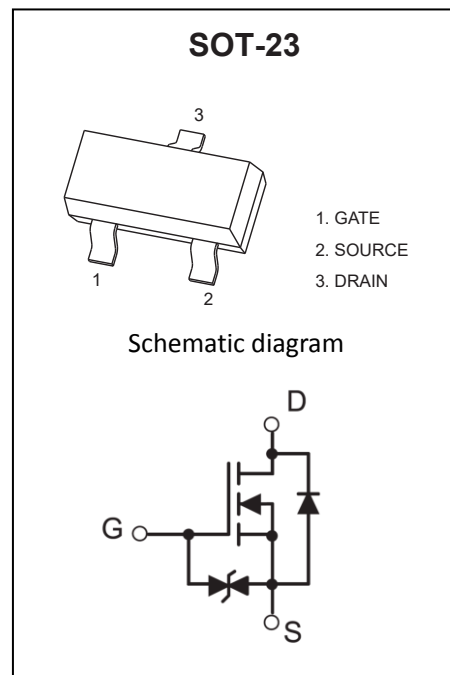
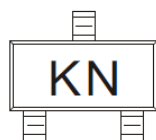
Feature

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for Portable equipment
- Easily designed drive circuits
- Easy to parallel

Application

- Interfacing , Switching

MARKING:



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

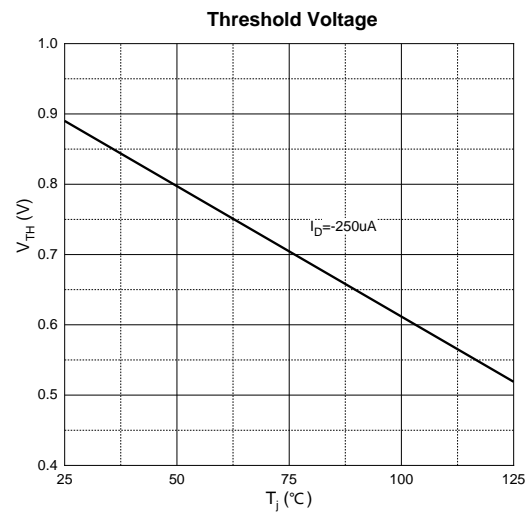
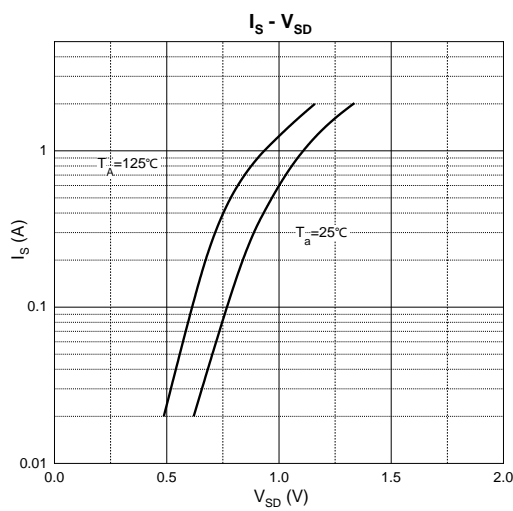
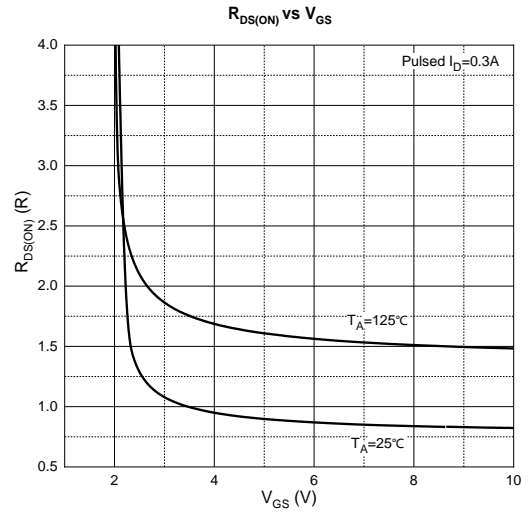
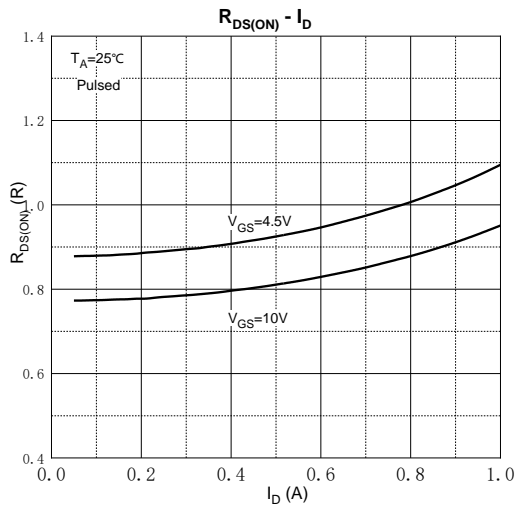
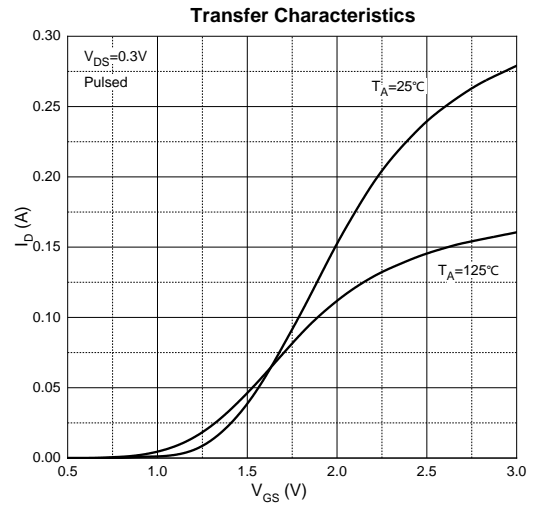
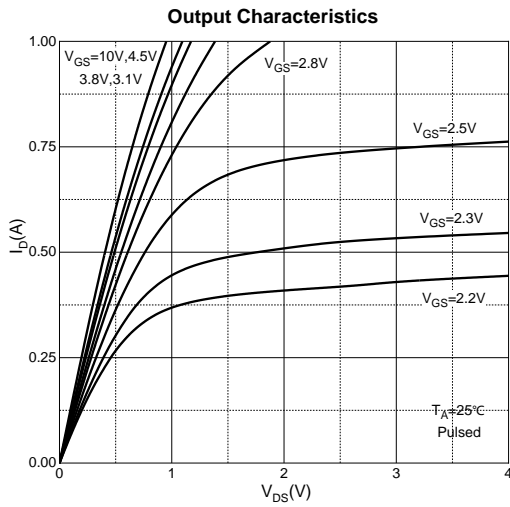
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	300	mA
Power Dissipation	P_D	0.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

T_a=25°C unless otherwise specified

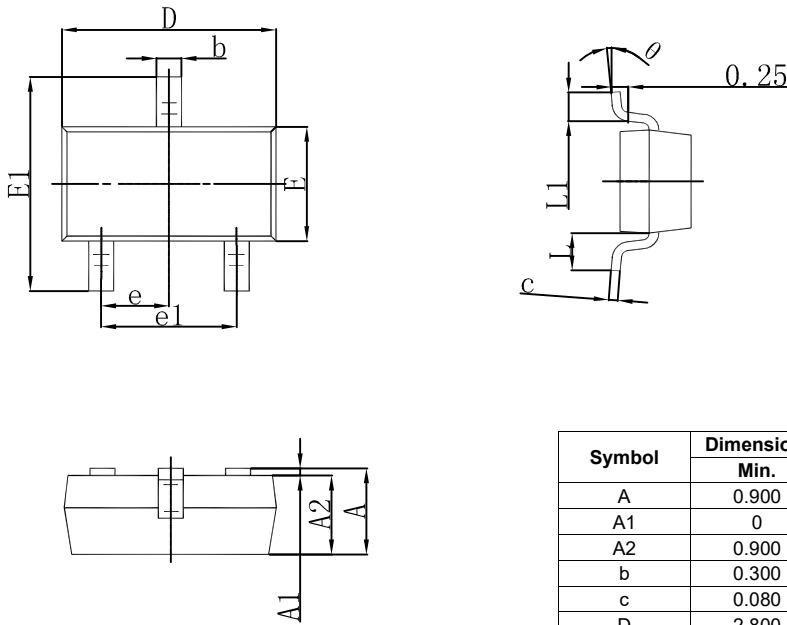
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = V _{DS} , I _D = 250μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0V			100	nA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±2	μA
Gate threshold voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _D = 250μA	0.6	1.0	1.5	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 10mA		0.75	3	Ω
		V _{GS} = 4V, I _D = 10mA		0.88	3	
		V _{GS} = 2.5V, I _D = 1mA		1.15	3.5	
Forward transconductance	g _{FS}	V _{DS} = 3V, I _D = 10mA	20			mS
Dynamic characteristics*						
Input Capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		29.6		pF
Output Capacitance	C _{oss}			5.2		pF
Reverse Transfer Capacitance	C _{rss}			3.3		pF
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		156.9		Ω
Switching Characteristics*						
Total Gate Charge	Q _g	V _{DS} = 15V, V _{GS} = 10V, I _D = 0.3A		555.6		pC
Gate-source Charge	Q _{gs}			10		
Gate-drain Charge	Q _{gd}			428.4		
Turn-on delay time	t _{d(on)}	V _{GS} = 5V, V _{DD} = 5V, I _D = 10mA, R _g = 10Ω, R _L = 500Ω,		15		ns
Rise time	t _r			35		ns
Turn-off delay time	t _{d(off)}			80		ns
Fall time	t _f			80		ns

*These parameters have no way to verify.

Typical Characteristics

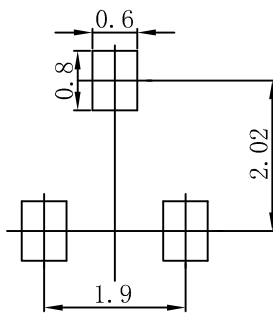


SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0	0.100	0	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	1.150	1.500	0.045	0.059
E1	2.250	2.650	0.089	0.104
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:

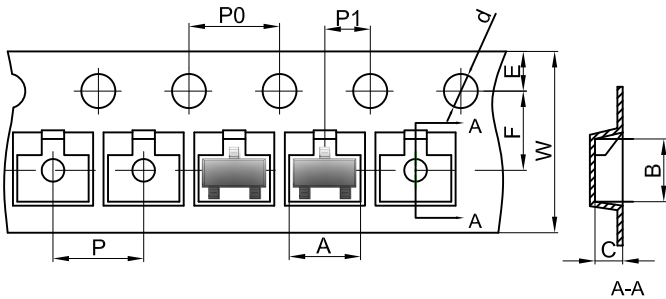
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

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Reel Taping Specifications For Surface Mount Devices-SOT-23

SOT-23 Embossed Carrier Tape



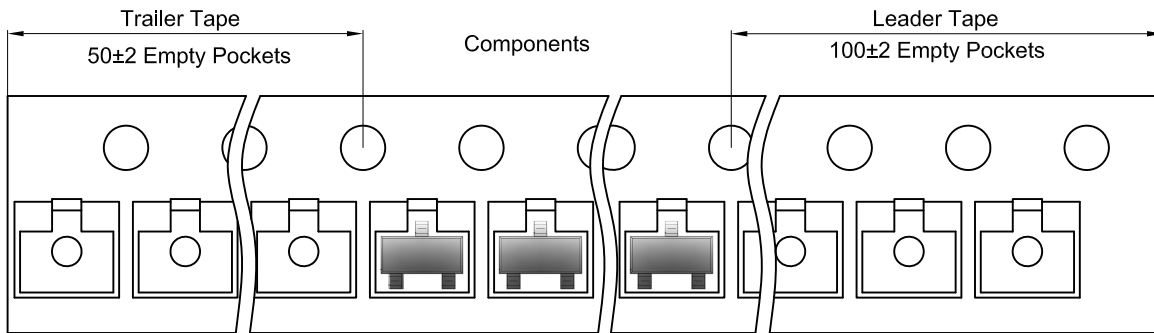
Packaging Description:

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).

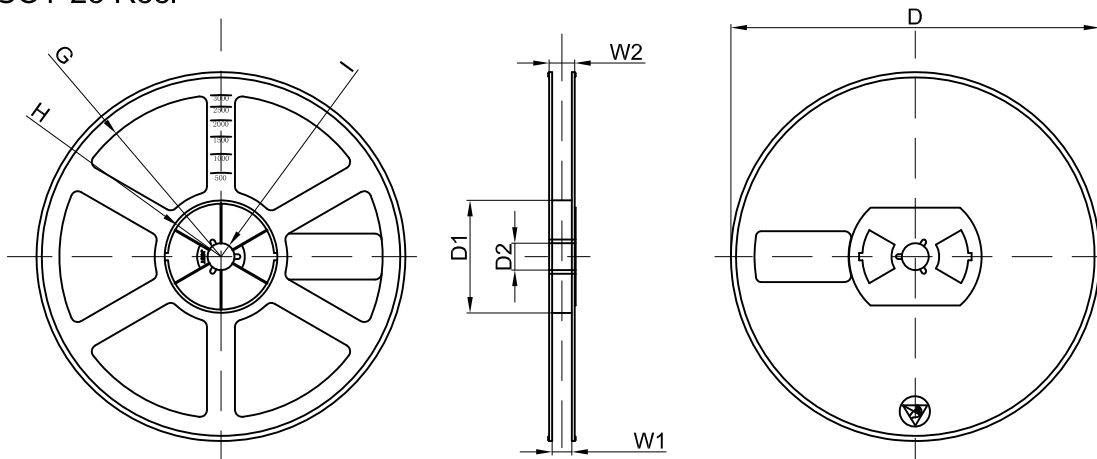
Dimensions are in millimeter

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	438×438×230	

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