



DONGGUAN NANJING ELECTRONICS LTD.,
SOT-23 Plastic-Encapsulate Diodes

NJ2306

30V N-Channel MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	33mΩ@10V	4.0A
	43mΩ@4.5V	

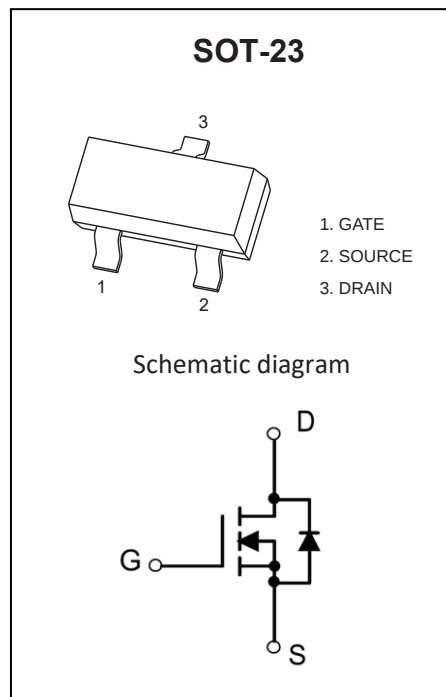
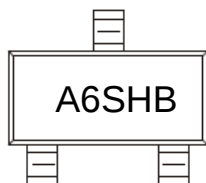
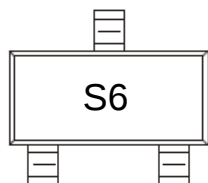
Feature

- TrenchFET Power MOSFET

Application

- Load Switch for Portable Devices
- DC/DC Converter

MARKING:



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

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	30	V
Gate - Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ^{1,5}	$T_A = 25^{\circ}\text{C}$	I_D	4	A
Pulsed Drain Current ²		I_{DM}	16	A
Power Dissipation ^{4,5}	$T_A = 25^{\circ}\text{C}$	P_D	1.5	W
Thermal Resistance from Junction to Ambient ⁵		$R_{\theta JA}$	83.3	$^{\circ}\text{C/W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~ +150	$^{\circ}\text{C}$

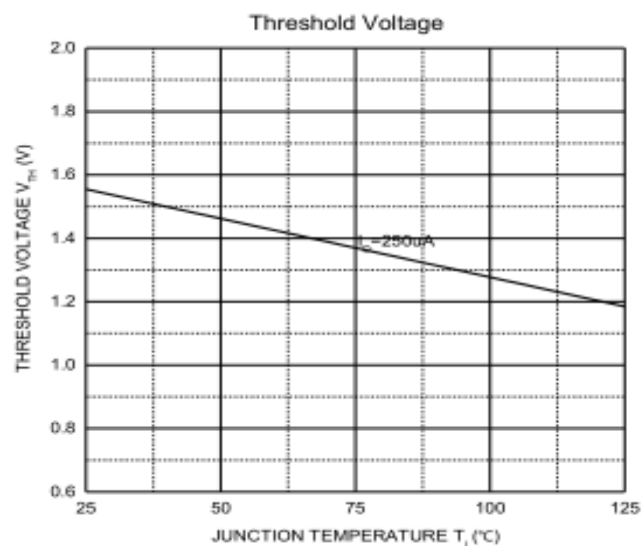
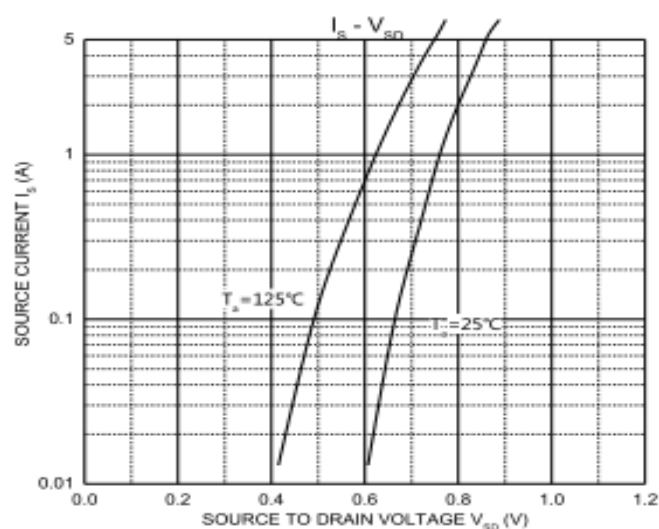
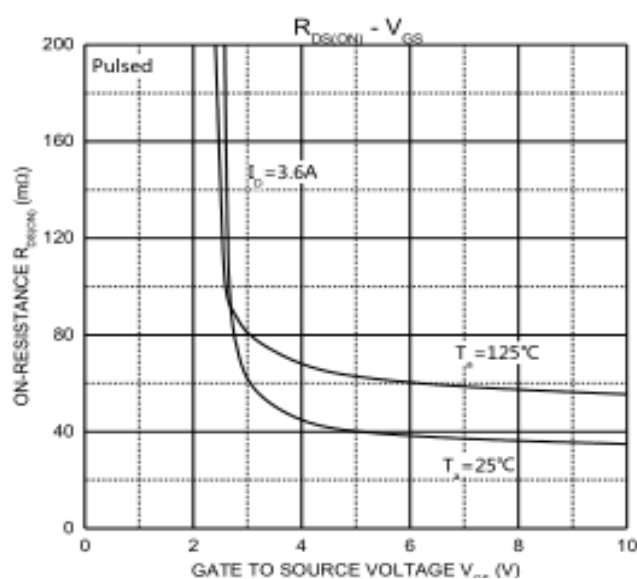
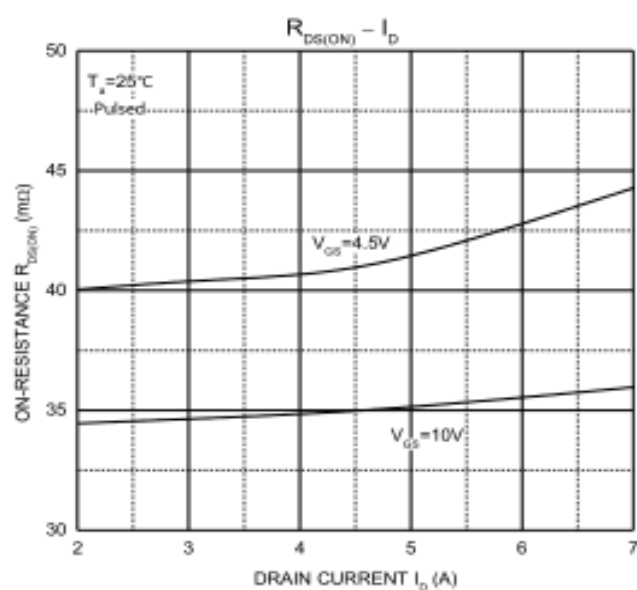
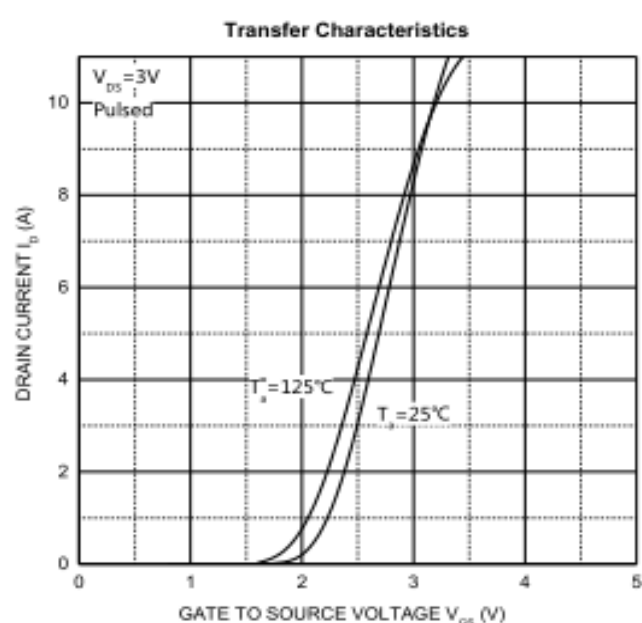
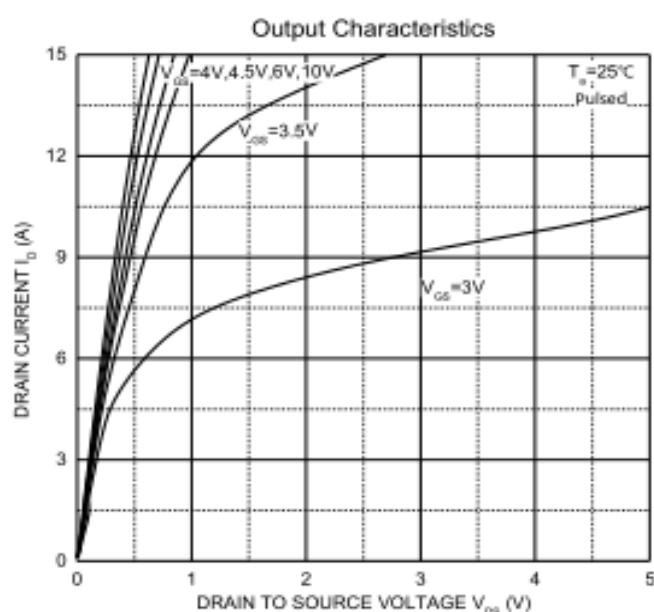
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
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			0.5	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.6	3	V
Drain-source on-resistance ³	R _{DS(on)}	V _{GS} =10V, I _D =3.5A		33	47	mΩ
		V _{GS} =4.5V, I _D =2.8A		43	65	
Forward tranconductance ³	g _{FS}	V _{DS} =4.5V, I _D =2.5A		7		S
Dynamic characteristics						
gate charge	Q _g	V _{DS} =15V,V _{GS} =5V,I _D =2.5A		3.0	4.5	nC
Total Gate Charge	Q _{gt}	V _{DS} =15V,V _{GS} =10V,I _D =2.5A		6	9	
Gate-source charge	Q _{gs}			1.6		
Gate-drain charge	Q _{gd}			0.6		
Gate resistance	R _g	f =1.0MHz		5	7.5	Ω
Input Capacitance	C _{iss}	V _{DS} =15V,V _{GS} =0V,f =1MHz		305		pF
Output Capacitance	C _{oss}			65		
Reverse Transfer Capacitance	C _{rss}			29		
Turn-on delay time	t _{d(on)}	V _{DD} =15V, R _L =15Ω, I _D ≈1A, V _{GEN} =10V,R _g =6Ω		7	11	ns
Turn-on rise time	t _r			12	18	
Turn-off delay time	t _{d(off)}			14	25	
Turn-off fall time	t _f			6	10	
Source-Drain Diode characteristics						
Body diode voltage ³	V _{SD}	I _S =1.25A,V _{GS} =0V		0.8	1.2	V

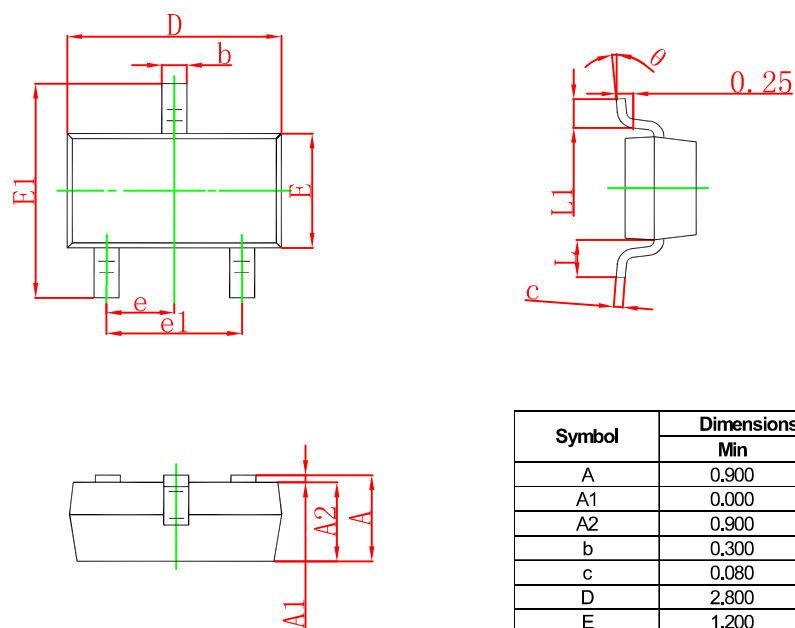
Notes:

- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 4.The power dissipation P_D is limited by T_{J(MAX)} = 150°C.
- 5.Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

Typical Characteristics

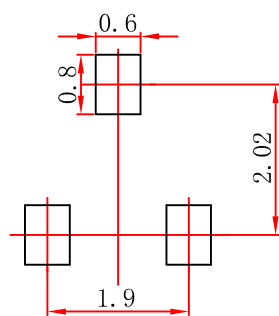


SOT-23 Package Outline Dimensions



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°

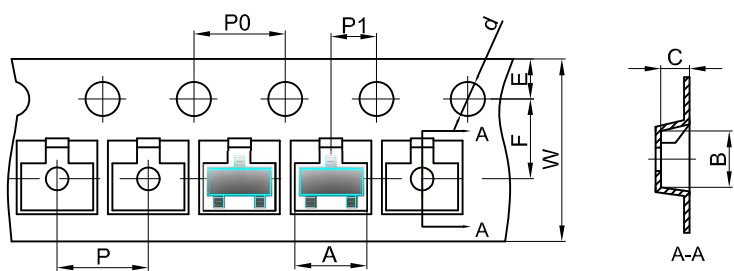
SOT-23 Suggested Pad Layout



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

SOT-23 Tape and Reel

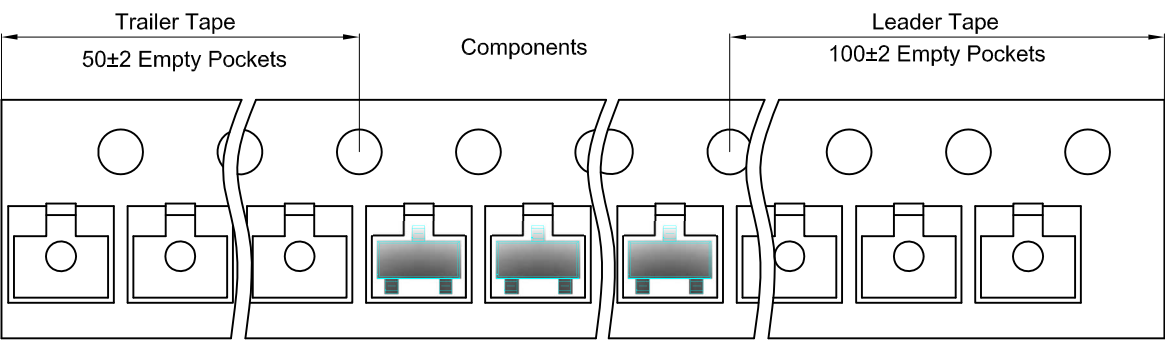
SOT-23 Embossed Carrier Tape



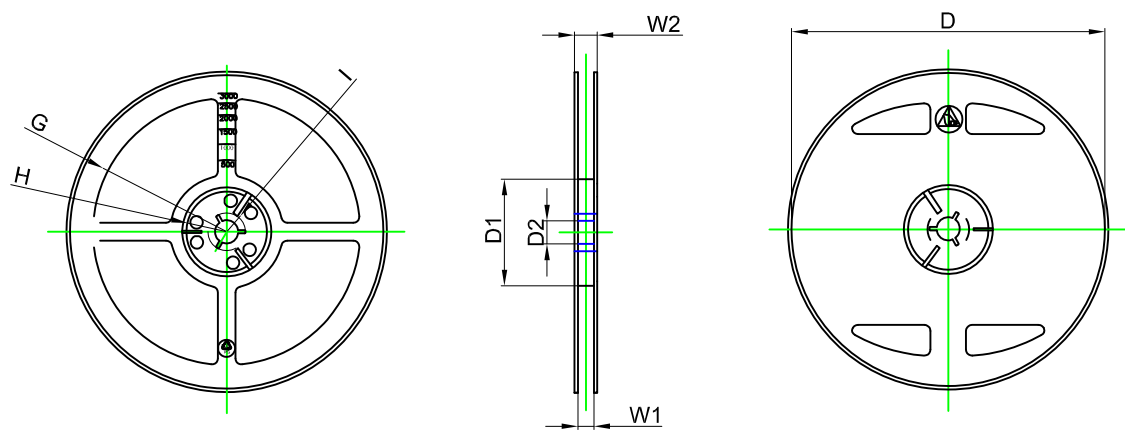
Packaging Description:
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent.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



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	R9.35	9.50	12.00

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	