

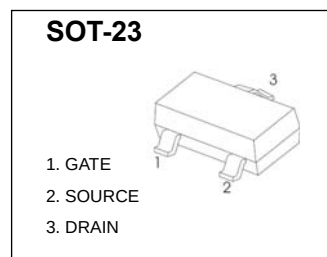


DONGGUAN NANJING ELECTRONICS LTD.,

SOT-23 Plastic-Encapsulate MOSFETS

NJ3440 N-Channel Enhancement Mode Field Effect Transistor

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
40V	42mΩ@ 10V	4.3A
	51mΩ@4.5V	
	63 mΩ@2.5V	



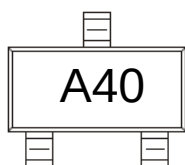
FEATURE

- High dense cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

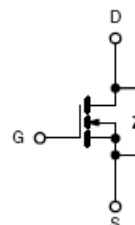
APPLICATION

- Load/Power Switching
- Interfacing Switching

MARKING



Equivalent Circuit



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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V _{DS}	40	V
Gate-Source Voltage		V _{GS}	±20	
Continuous Drain Current		I _D	4.3	A
Pulsed Drain Current (Note 4)		I _{DM}	17.2	
Power Dissipation	T _a =25°C	P _D	1.25	W
	Derate above 25°C		10	mW/°C
Operating Junction and Storage Temperature Range		T _J , T _{STG}	-55~150	°C
Typical Thermal Resistance		R _{θJA}	100	°C/W
- Junction to Ambient (Note 3)				

MOSFET ELECTRICAL CHARACTERISTICS

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	40	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.0	1.5	2.5	
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =4.3A	-	35	42	mΩ
		V _{GS} =4.5V, I _D =3.9A	-	44	51	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =40V, V _{GS} =0V	-	-	1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Dynamic ^(Note 5)						
Total Gate Charge	Q _g	V _{DS} =20V, I _D =4.3A, V _{GS} =4.5V ^(Note 1,2)	-	4.8	-	nC
Gate-Source Charge	Q _{gs}		-	1.4	-	
Gate-Drain Charge	Q _{gd}		-	1.8	-	
Input Capacitance	C _{iss}	V _{DS} =20V, V _{GS} =0V, f=1.0MHZ	-	410	-	pF
Output Capacitance	C _{oss}		-	50	-	
Reverse Transfer Capacitance	C _{rss}		-	30	-	
Turn-On Delay Time	td _(on)	V _{DD} =20V, I _D =3.5A, V _{GS} =10V, R _G =1Ω ^(Note 1,2)	-	4	-	ns
Turn-On Rise Time	tr		-	30	-	
Turn-Off Delay Time	td _(off)		-	15	-	
Turn-Off Fall Time	tf		-	8	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	1.0	A
Diode Forward Voltage	V _{SD}	I _S =1.0A, V _{GS} =0V	-	0.78	1.2	V
Reverse Recovery Time	trr	V _{GS} =0V, I _S =3.5A	-	10.2	-	ns
Reverse Recovery Charge	Qrr	dI _F / dt=100A/us	-	5.5	-	nC

NOTES :

1. Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$.
2. Essentially independent of operating temperature typical characteristics.
3. $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper.
4. The maximum current rating is package limited.
5. Guaranteed by design, not subject to production testing.

Typical Characteristics

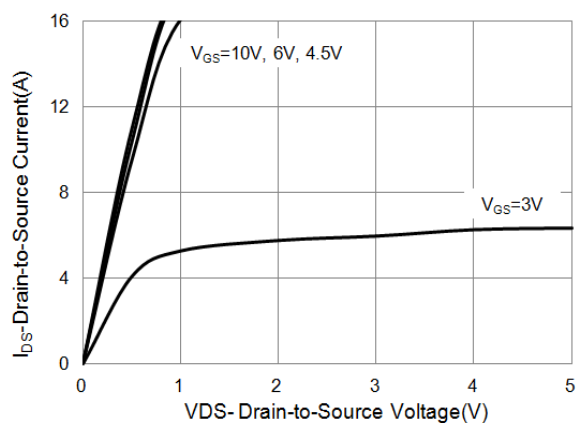


Fig.1 On-Region Characteristics

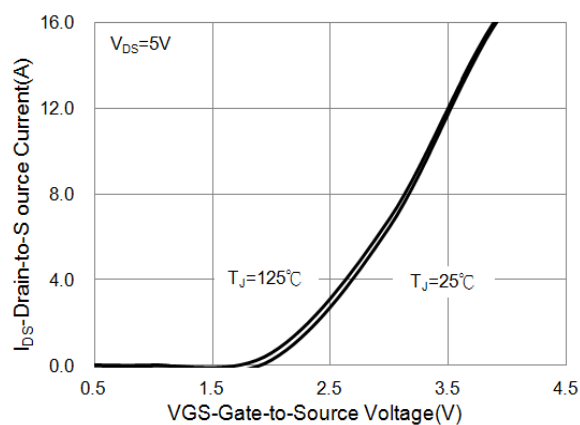


Fig.2 Transfer Characteristics

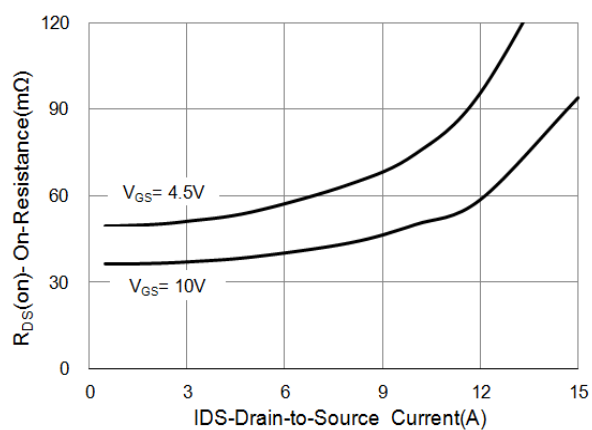


Fig.3 On-Resistance vs. Drain Current

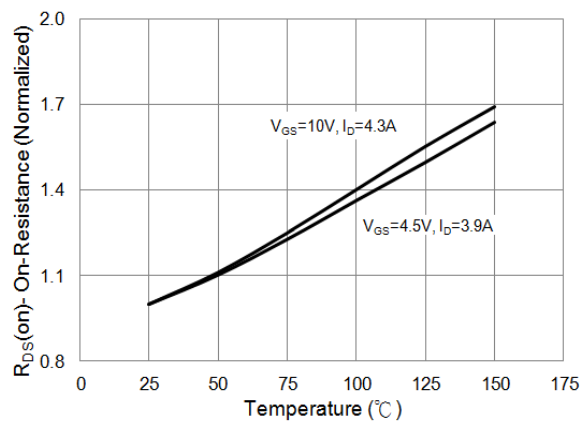


Fig.4 On-Resistance vs. Junction temperature

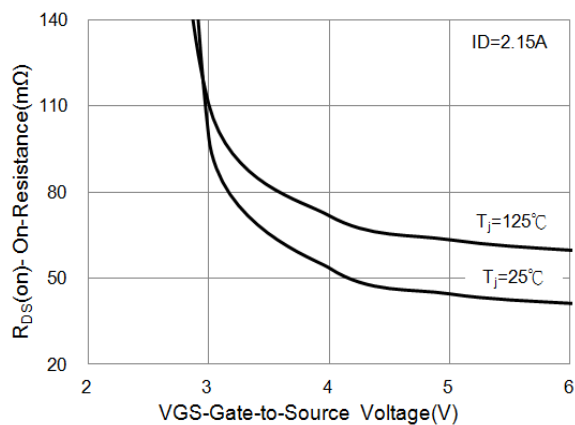


Fig.5 On-Resistance Variation with V_{GS}

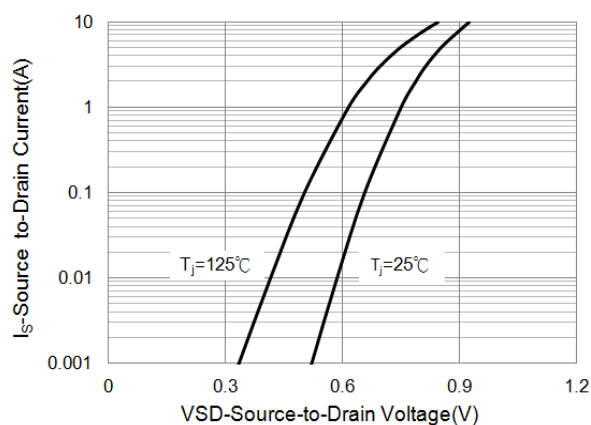
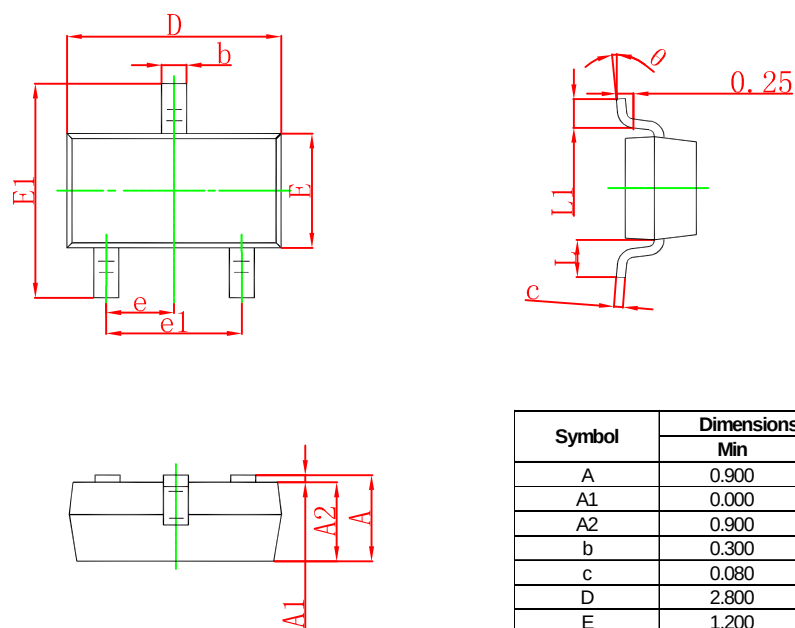


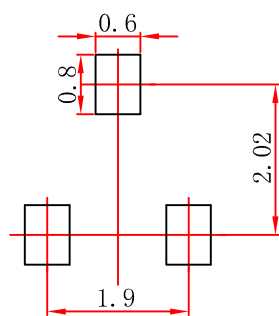
Fig.6 Body Diode Characteristics

SOT-23 Package Outline Dimensions



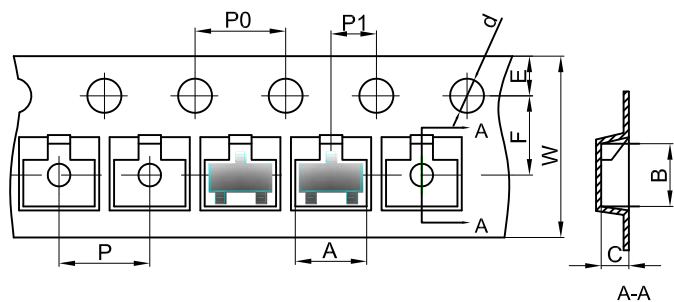
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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 Embossed Carrier Tape

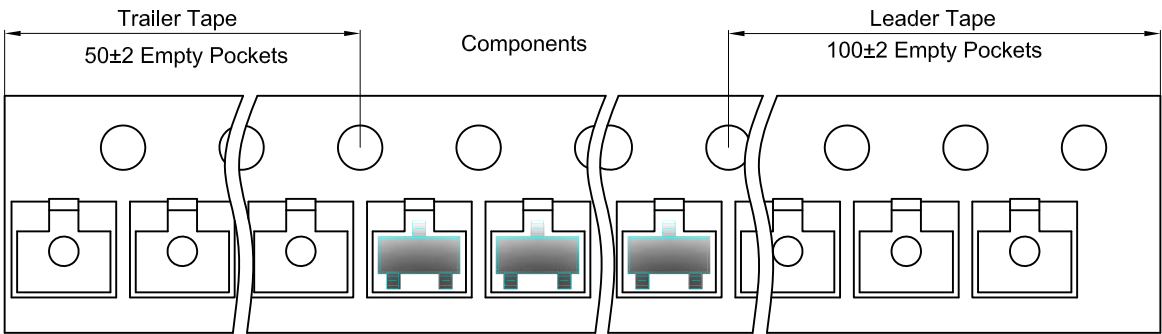


Packaging Description:

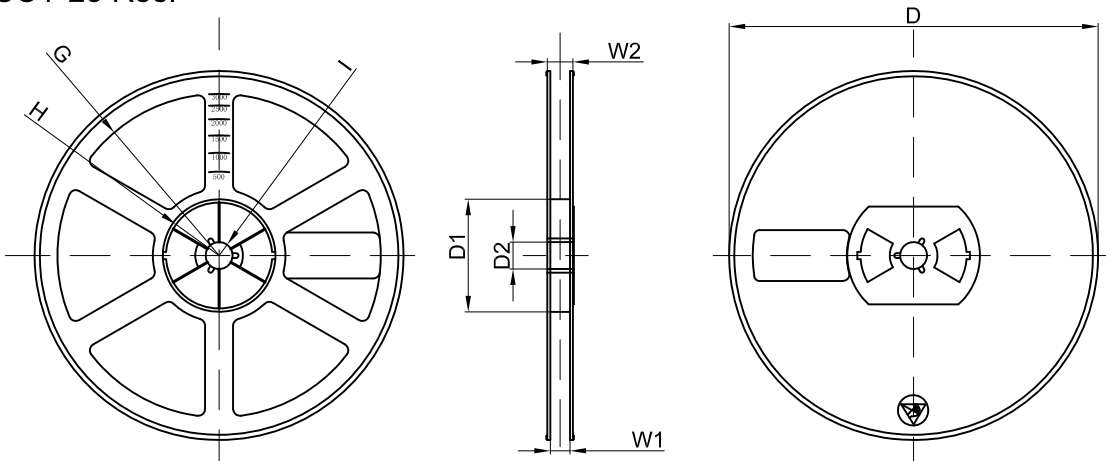
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in 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	30,000 pcs	203×203×195	120,000 pcs	438×438×220	