



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	45mΩ@4.5V	2.1A
	60mΩ@2.5V	

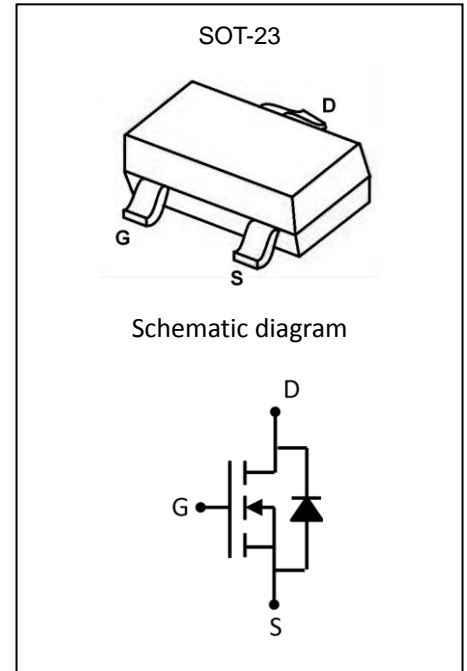
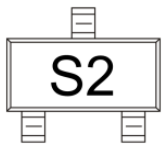
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

Application

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

MARKING:



ABSOLUTE 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}	±8	V
Continuous Drain Current	I_D	2.1	A
Plused Drain Current	I_{DM}	10	A
Continuous Source-Drain Current(Diode Conduction)	I_S	0.6	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

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

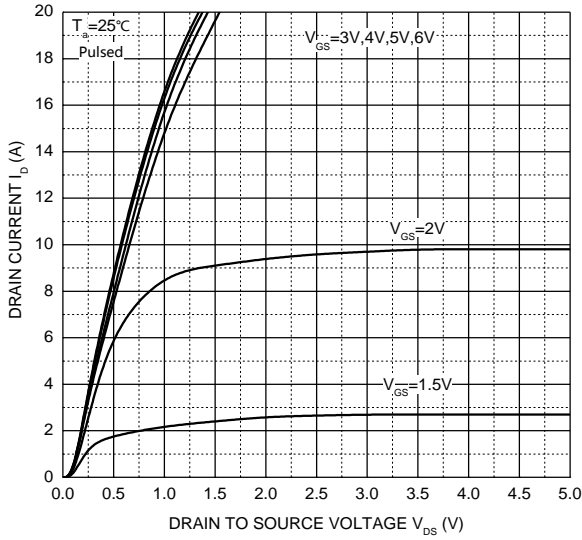
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20	22		V
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±8V, V _{DS} = 0V			±0.1	μA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.6	0.9	1.2	V
Drain-source on-resistance ^a	R _{DS(on)}	V _{GS} =4.5V, I _D =3.6A		32	45	mΩ
		V _{GS} =2.5V, I _D =3.1A		43	60	
Forward tranconductance ^a	g _{FS}	V _{DS} =5V, I _D =3.6A	8			S
Dynamic characteristics						
Input Capacitance ^b	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz		260		pF
Output Capacitance ^b	C _{oss}			48		pF
Reverse Transfer Capacitance ^b	C _{rss}			27		pF
Total gate charge	Q _g	V _{DS} =10V, V _{GS} =4.5V, I _D =3.0A		2.9	5	nC
Gate-source charge	Q _{gs}			0.4		nC
Gate-drain charge	Q _{gd}			0.6		nC
Switching Characteristics^b						
Turn-on delay time	t _{d(on)}	V _{DD} =10V, R _L =3.3Ω, V _{GEN} =4.5V, R _g =6Ω		2.5		ns
Turn-on rise time	t _r			3.2		ns
Turn-off delay time	t _{d(off)}			21		ns
Turn-off fall time	t _f			3		ns
Source-Drain Diode characteristics						
Diode Forward voltage	V _{DS}	V _{GS} =0V, I _S =0.94A		0.7	1.2	V

Notes :

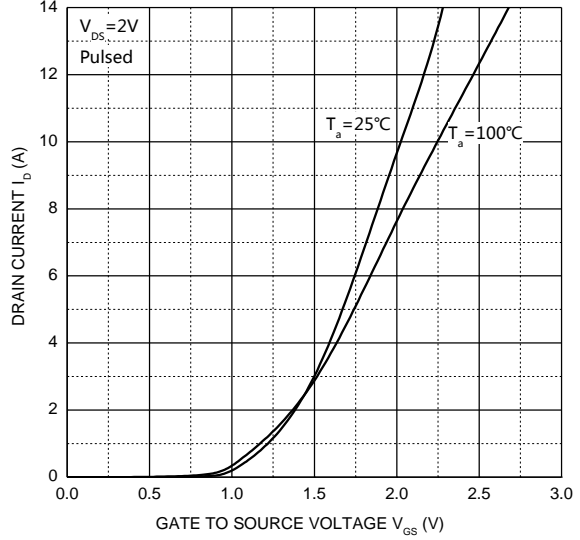
- a. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
b. These parameters have no way to verify.

Typical Electrical and Thermal Characteristics

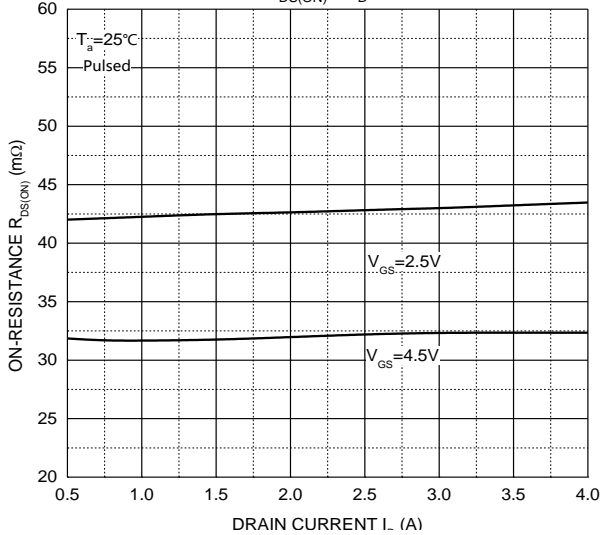
Output Characteristics



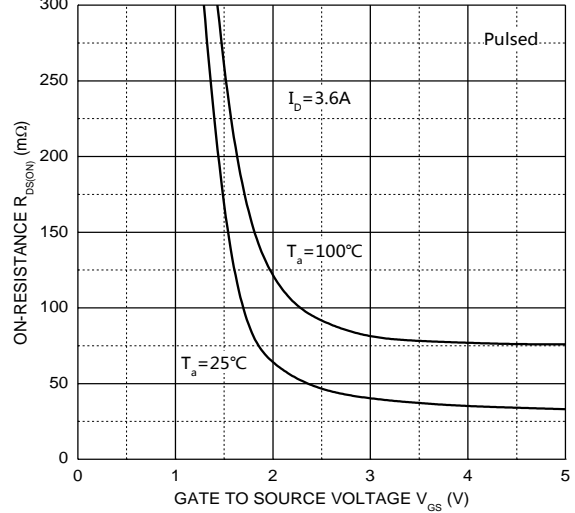
Transfer Characteristics



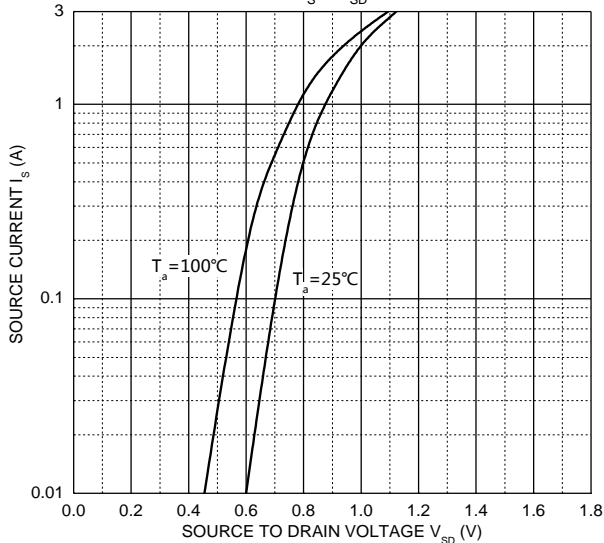
$R_{DS(ON)} - I_D$



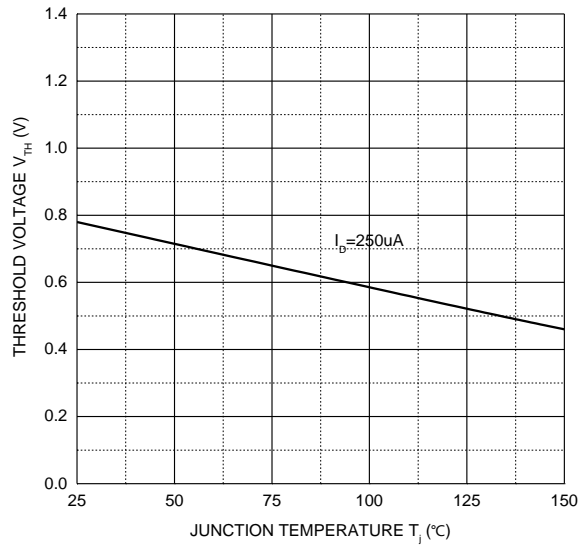
$R_{DS(ON)} - V_{GS}$

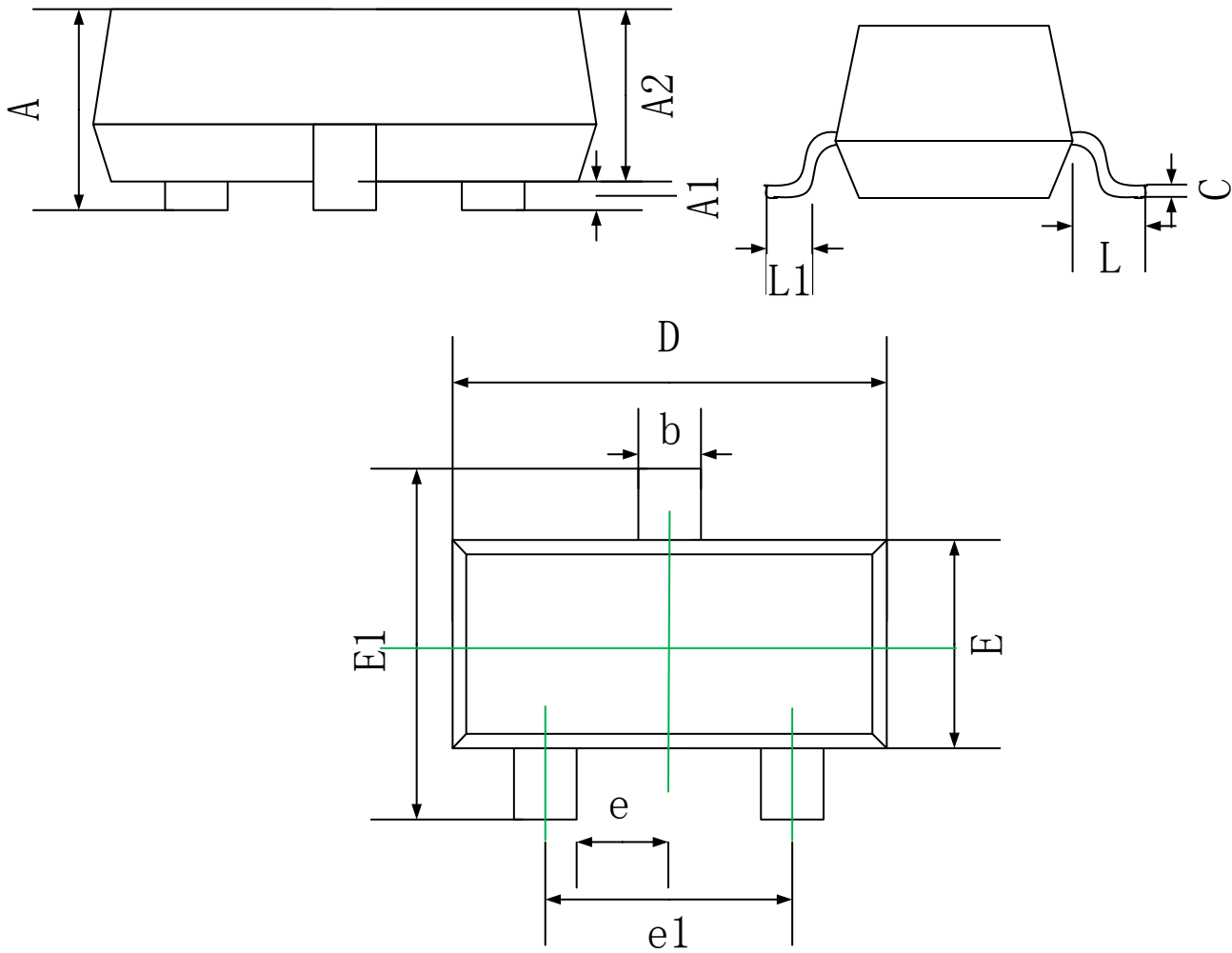


$I_S - V_{SD}$



Threshold Voltage



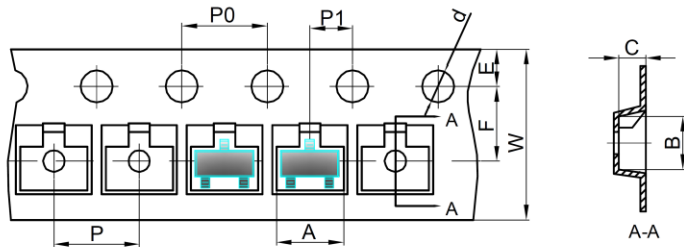
SOT-23 Package Information


Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50

SOT-23 Tape and Reel

SOT-23 Tape and reel

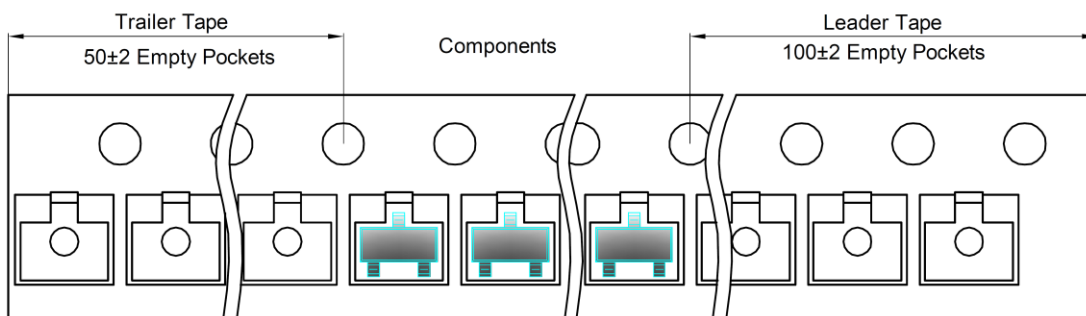
SOT-23 Embossed Carrier Tape



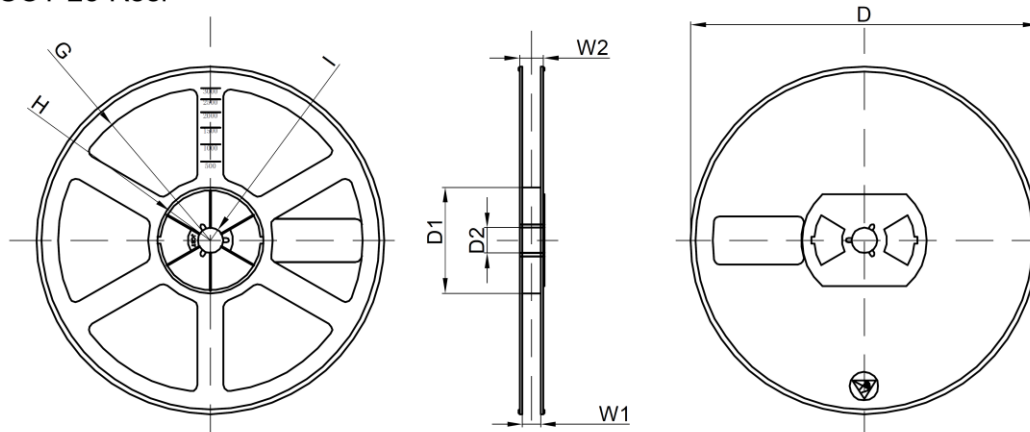
Dimensions are in millimeter

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	