

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-12V	28mΩ@-4.5V	-6A
	32mΩ@-3.7V	
	40mΩ@-2.5V	
	63mΩ@-1.8V	
	150mΩ@-1.5V	

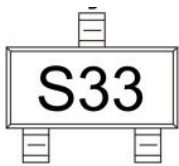
Feature

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

Application

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

MARKING:

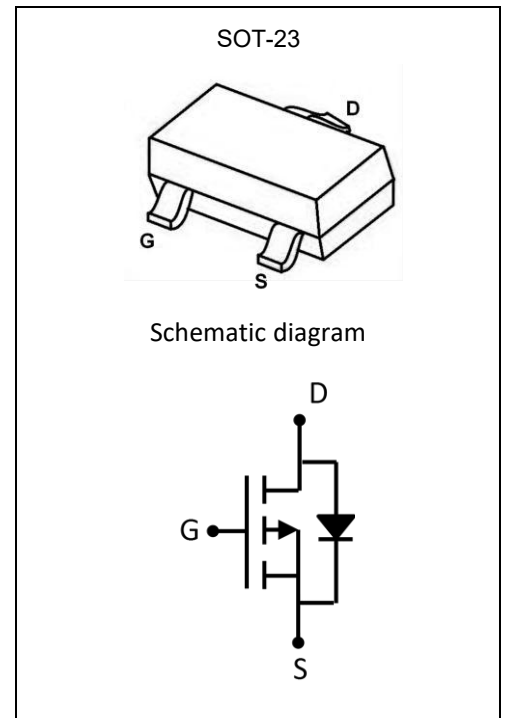


ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-12	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	I_D	-6 ^a	A
Pulsed Drain Current ($t=300\mu\text{s}$)	I_{DM}	-20	A
Power Dissipation	P_D	0.35 ^b	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357 ^b	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}\text{C}$

a. Device mounted on FR-4 substrate board, with minimum recommended pad layout, single side.

b. Device mounted on no heat sink.



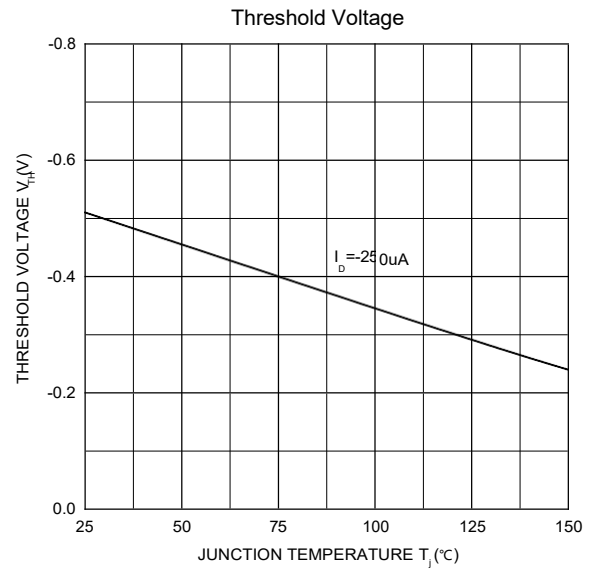
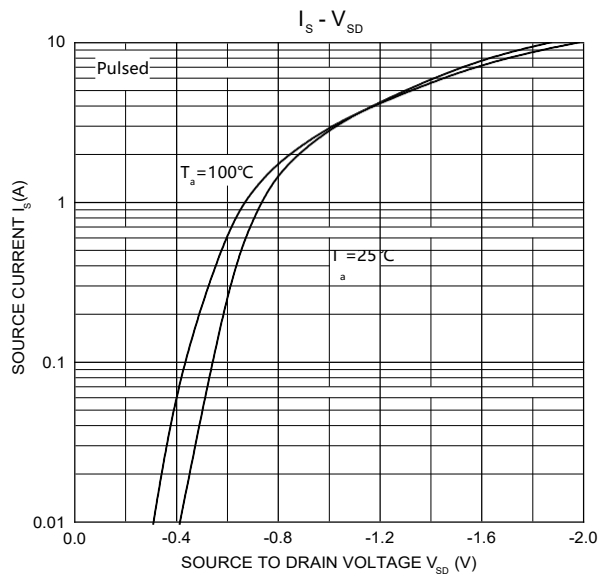
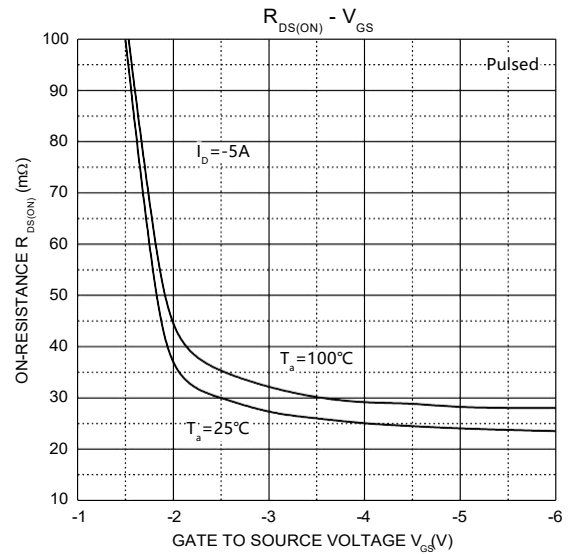
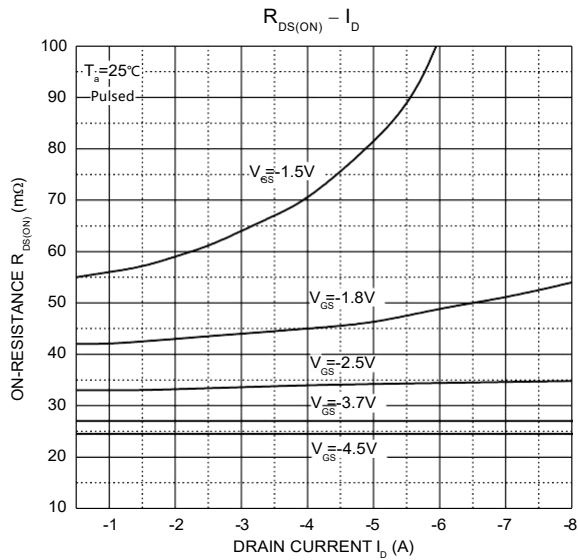
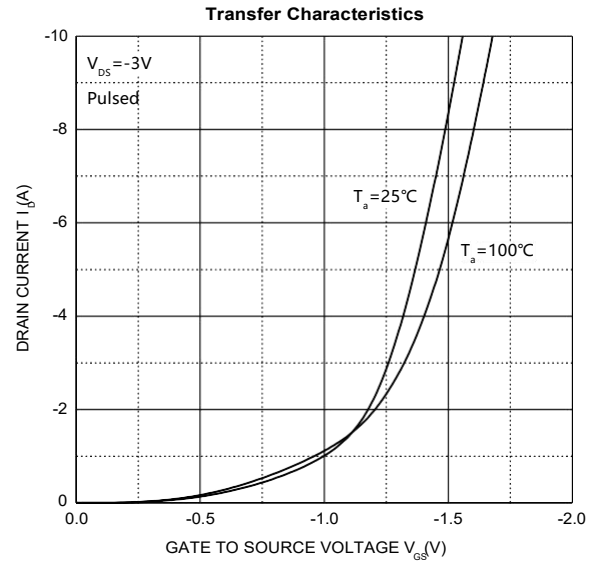
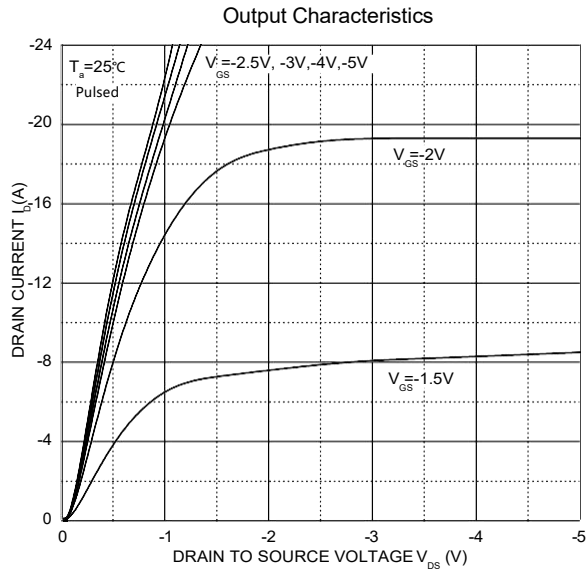
MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

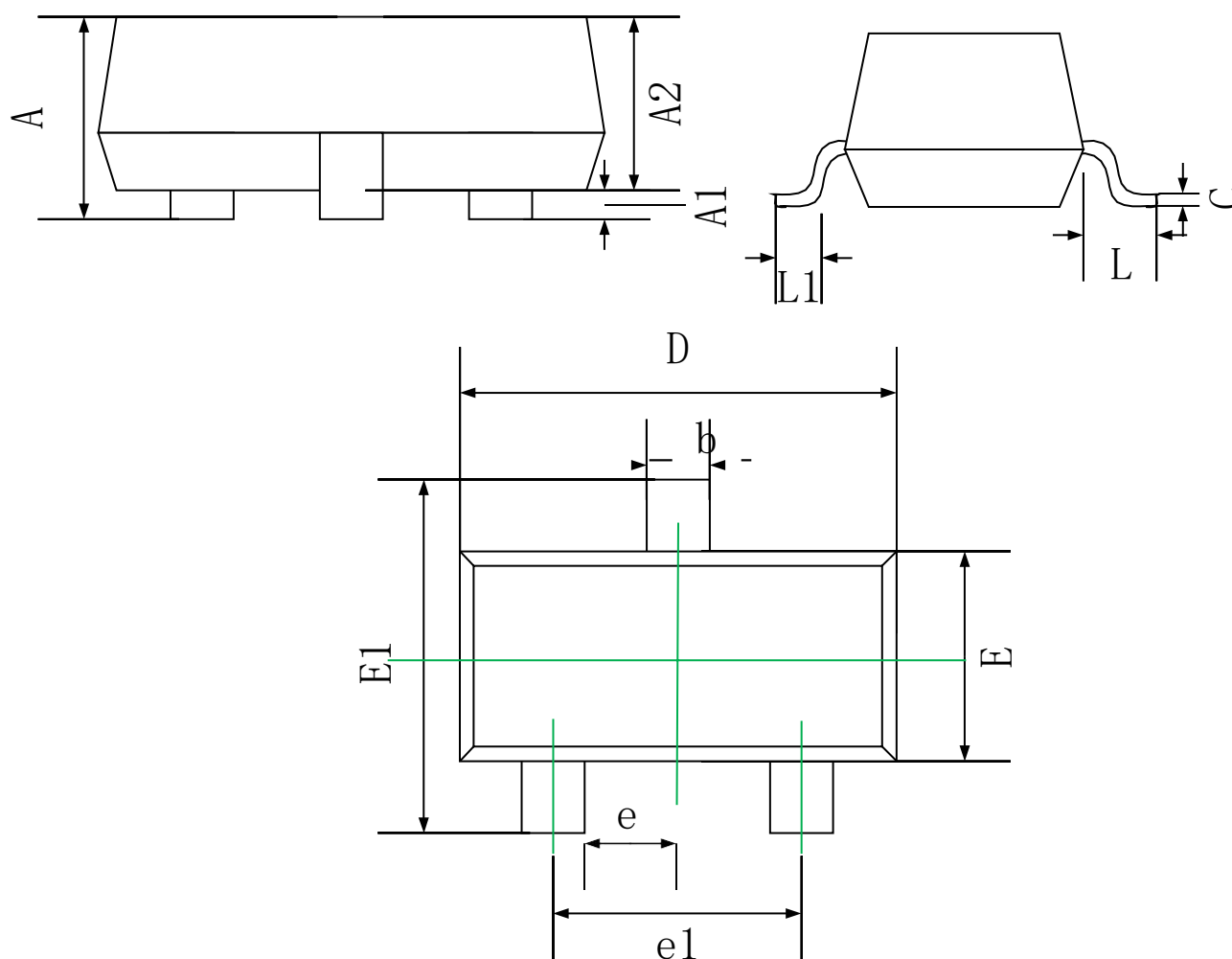
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-12			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-12V,V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±8V, V _{DS} = 0V			±100	nA
Gate threshold voltage ^a	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-0.65	-1	V
Drain-source on-resistance ^a	R _{DS(on)}	V _{GS} =-4.5V, I _D =-5A		19	28	mΩ
		V _{GS} =-3.7V, I _D =-4.6A		21	32	
		V _{GS} =-2.5V, I _D =-4.3A		27	40	
		V _{GS} =-1.8V, I _D =-1A		35	63	
		V _{GS} =-1.5V, I _D =-0.5A		50	150	
Forward tranconductance ^a	g _{FS}	V _{DS} =-5V, I _D =-5A	10			S
Dynamic characteristics ^b						
Input Capacitance	C _{iSS}	V _{DS} =-6V,V _{GS} =0V,f =1MHz		1275		pF
Output Capacitance	C _{oSS}			255		
Reverse Transfer Capacitance	C _{rSS}			236		
Gate resistance	R _g	f =1MHz	1.9		19	Ω
Total Gate Charge	Q _g	V _{DS} =-6V,V _{GS} =-4.5V,I _D =-5A		14	21	nC
Gate-Source Charge	Q _{gs}			2.3		
Gate-Drain Charge	Q _{gd}			3.6		
Turn-on delay time	t _{d(on)}	V _{DD} =-6V,V _{GEN} =-4.5V,I _D =-4A R _L =6Ω,R _{GEN} =1Ω		26	40	ns
Turn-on rise time	t _r			24	40	
Turn-off delay time	t _{d(off)}			45	75	
Turn-off fall time	t _f			20	35	
Source-Drain Diode characteristics						
Diode forward current	I _S	T _C =25℃			-1.4	A
Diode pulsed forward current	I _{SM}				-20	A
Diode Forward voltage ^a	V _{DS}	V _{GS} =0V, I _S =-4A			-1.2	V
Diode reverse recovery time ^b	t _{rr}	I _F =-4A,dI/dt =100A/μs			48	ns
Diode reverse recovery charge ^b	Q _{rr}				16	nC

Notes:

- Pulse test; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics



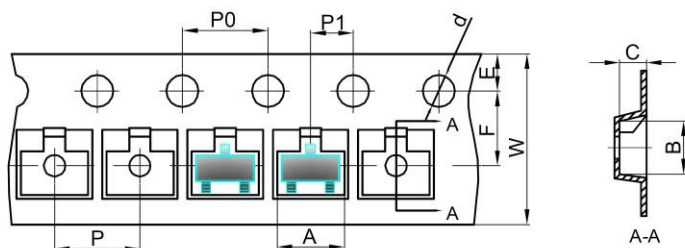
SOT-23 Package Information


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

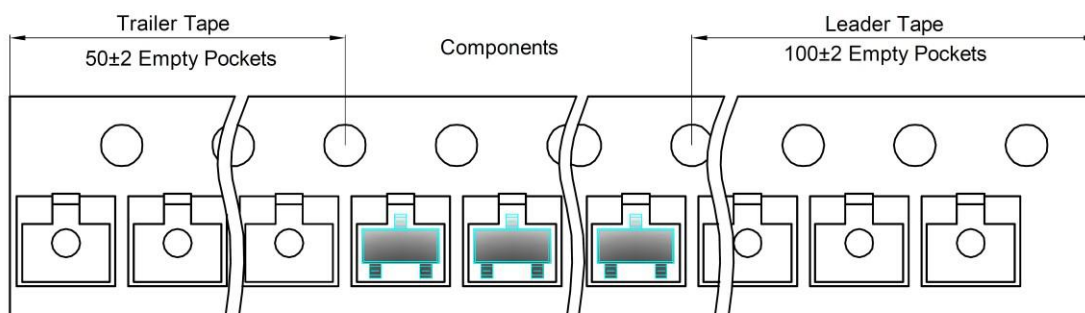
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

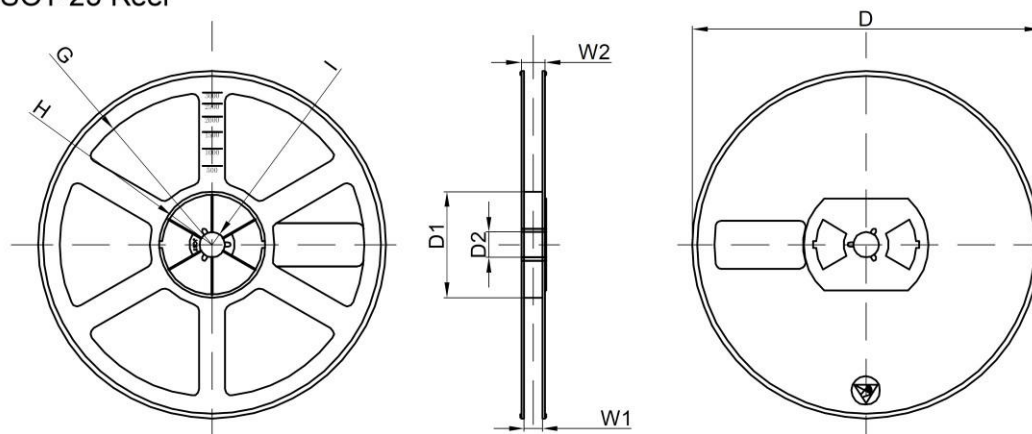


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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	