

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-12V	45mΩ@-4.5V	-4.1A
	60mΩ@-2.5V	
	90mΩ@-1.8V	

Feature

TrenchFET Power MOSFET

Excellent $R_{DS(on)}$ and Low Gate Charge

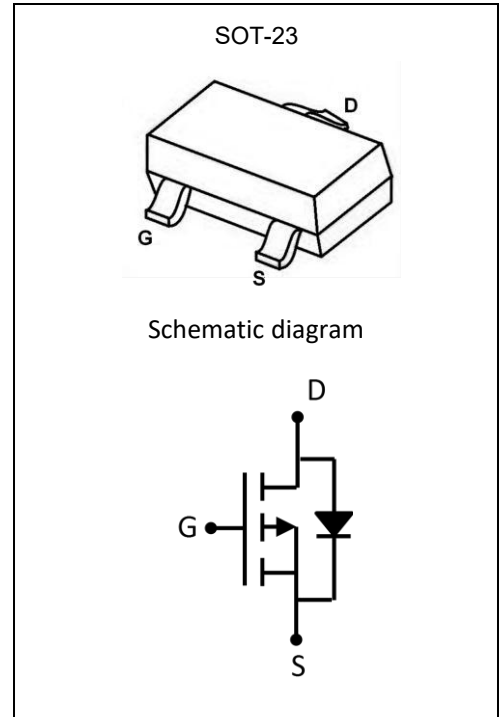
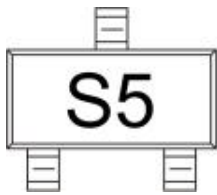
Application

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	-4.1	A
Pulsed Drain Current ($t=300\mu\text{s}$)	I_{DM}	-15	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

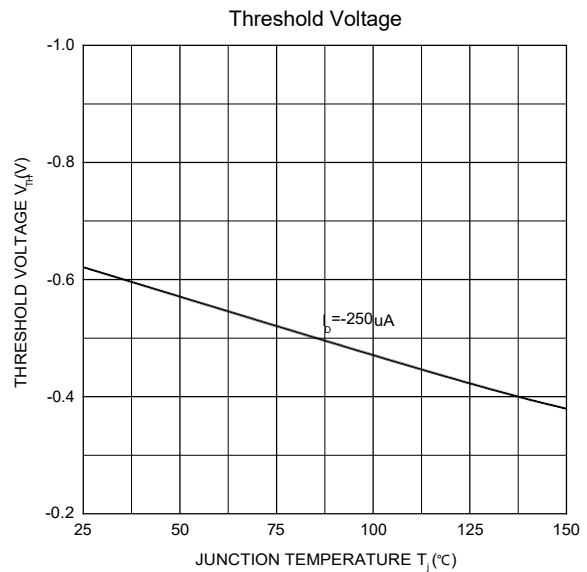
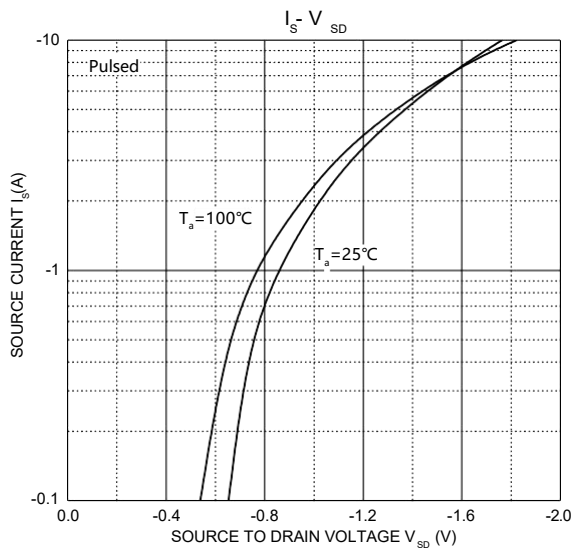
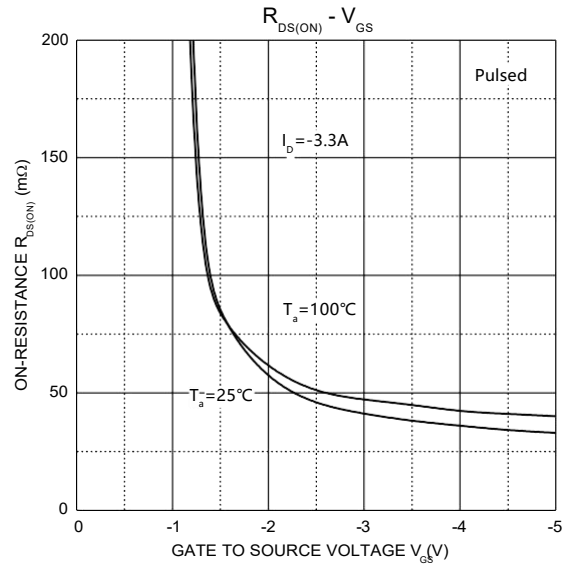
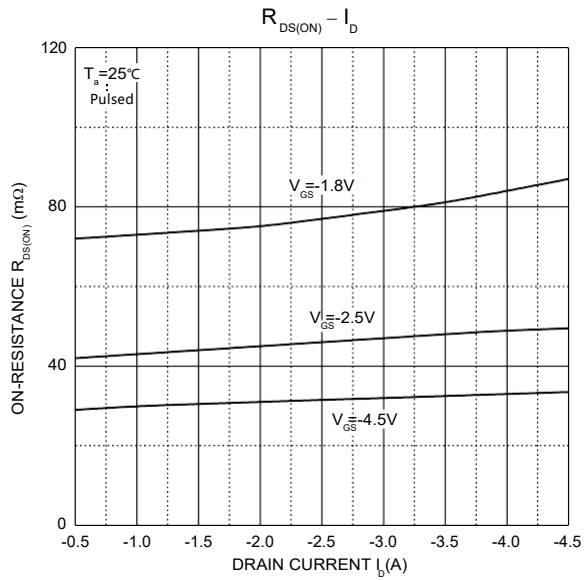
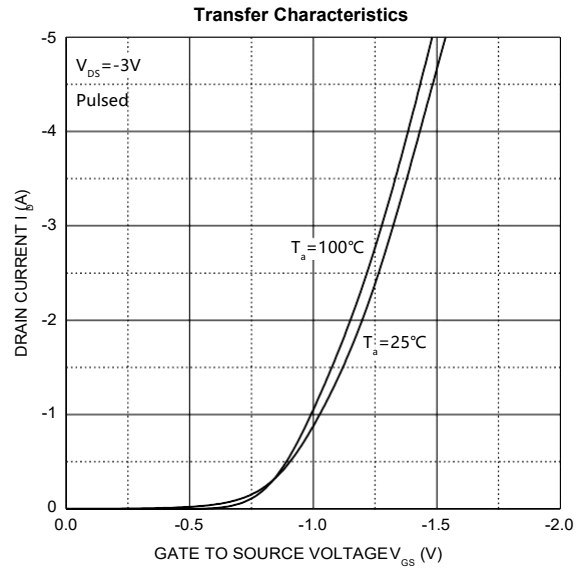
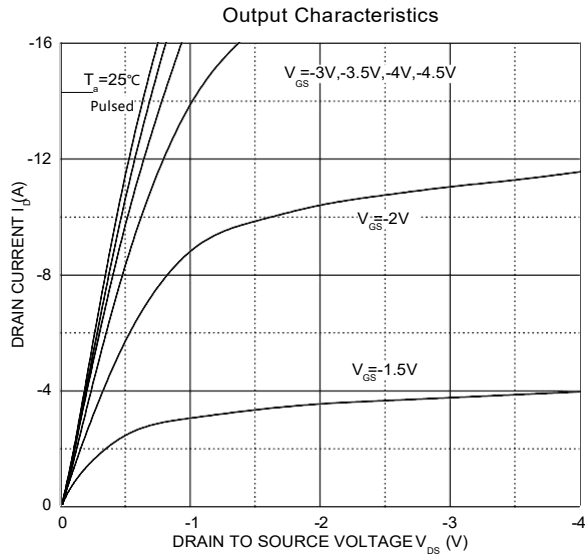
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-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	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.5		-0.9	V
Drain-source on-resistance ^a	R _{DS(on)}	V _{GS} = -4.5V, I _D = -3.5A		30	45	mΩ
		V _{GS} = -2.5V, I _D = -3.0A		40	60	
		V _{GS} = -1.8V, I _D = -2.0A		60	90	
Forward tranconductance ^a	g _{FS}	V _{DS} = -5V, I _D = -4.1A	6			S
Dynamic characteristics^{b,c}						
Input Capacitance	C _{iss}	V _{DS} = -4V, V _{GS} = 0V, f = 1MHz		740		pF
Output Capacitance	C _{oss}			290		
Reverse Transfer Capacitance	C _{rss}			190		
Gate resistance	R _g	f = 1MHz	1.4		14	Ω
Total Gate Charge	Q _g	V _{DS} = -4V, V _{GS} = -2.5V, I _D = -4.1A		4.5	9	nC
Gate-Source Charge	Q _{gs}			1.2		
Gate-Drain Charge	Q _{gd}			1.6		
Turn-on delay time	t _{d(on)}	V _{DD} = -4V, V _{GEN} = -4.5V, I _D = -3.3A R _L = 1.2Ω, R _{GEN} = 1Ω		13	20	ns
Turn-on rise time	t _r			35	53	
Turn-off delay time	t _{d(off)}			32	48	
Turn-off fall time	t _f			10	20	
Turn-on delay time	t _{d(on)}	V _{DD} = -4V, V _{GEN} = -8V, I _D = -3.3A R _L = 6Ω, R _{GEN} = 1Ω		5	10	
Turn-on rise time	t _r			11	17	
Turn-off delay time	t _{d(off)}			22	33	
Turn-off fall time	t _f			16	24	
Source-Drain Diode characteristics						
Diode forward current	I _S	T _C = 25°C			-1.4	A
Diode pulsed forward current ^a	I _{SM}				-10	A
Diode Forward voltage	V _{DS}	V _{GS} = 0V, I _S = -3.3A			-1.2	V

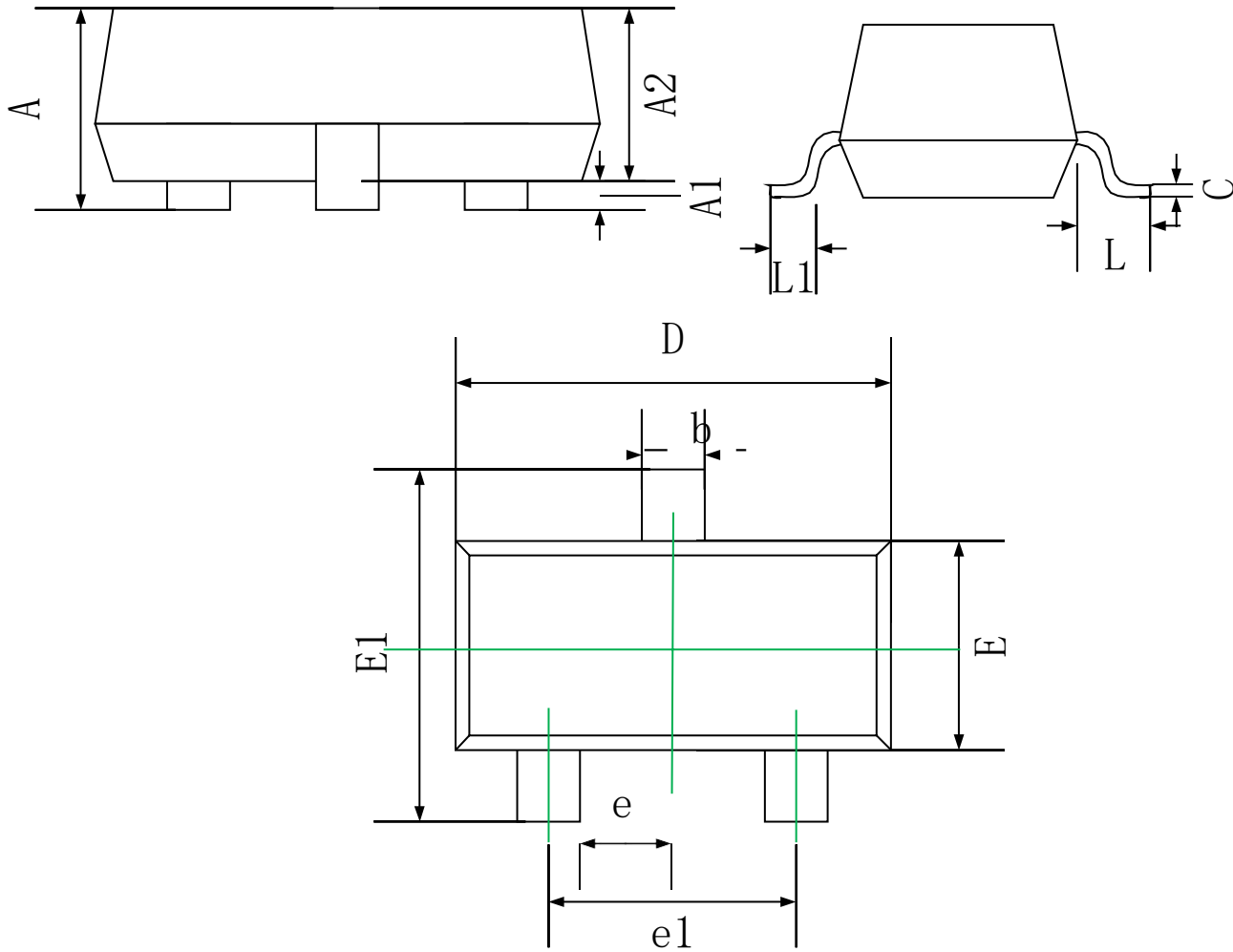
Note :

- Pulse Test ; Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
- Guaranteed by design, not subject to production testing.
- These parameters have no way to verify.

Typical Electrical and Thermal Characteristics



SOT-23 Package Information

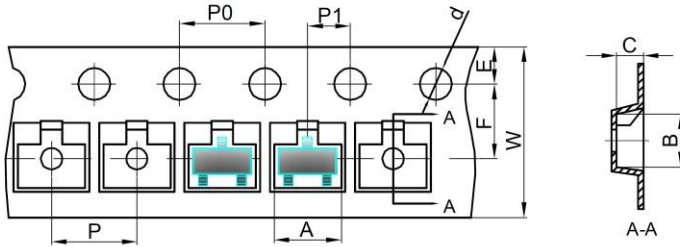


Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50

SOT-23 Tape and Reel

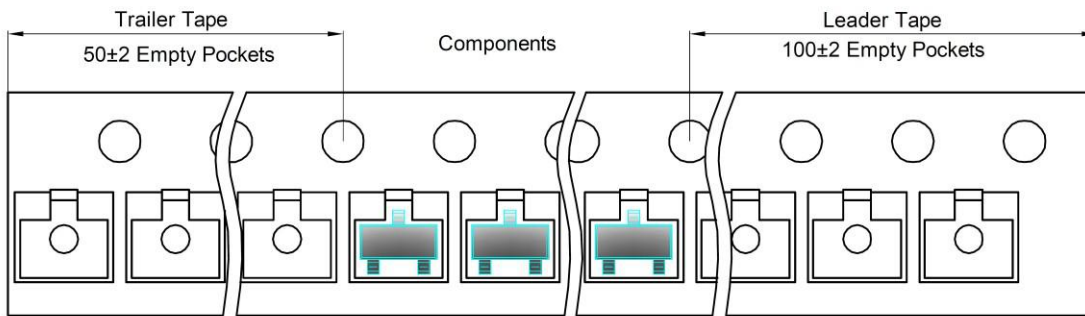
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

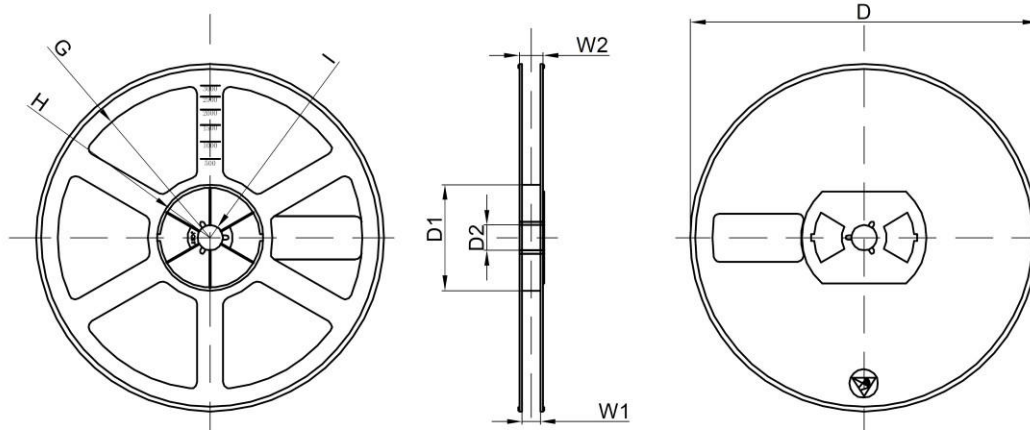


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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	