

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	17mΩ@4.5V	6A
	20mΩ@2.5V	
	30mΩ@1.8V	

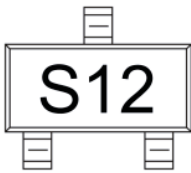
Feature

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

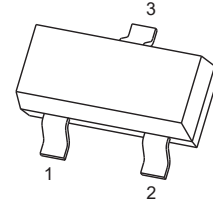
Application

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

MARKING:

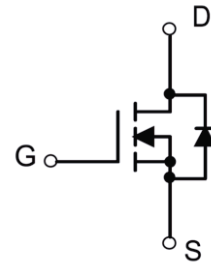


SOT-23



1. GATE
2. SOURCE
3. DRAIN

Schematic diagram



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 ^{1,5}	I_D	5	A
Pulsed Drain Current ²	I_{DM}	20	A
Power Dissipation ^{4,5}	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	$^{\circ}\text{C}$

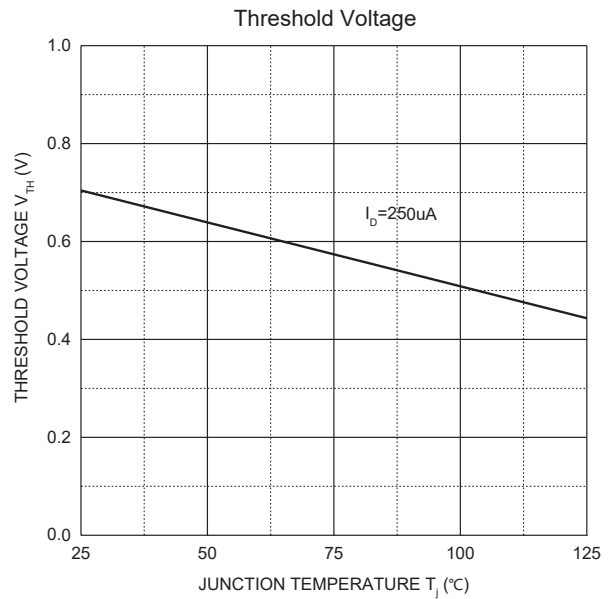
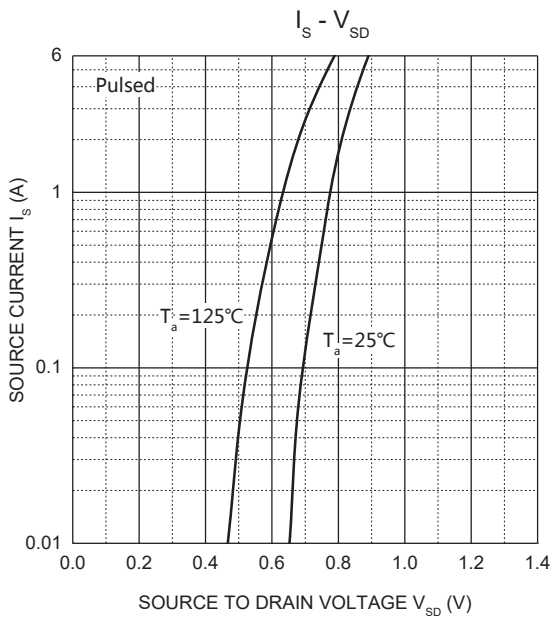
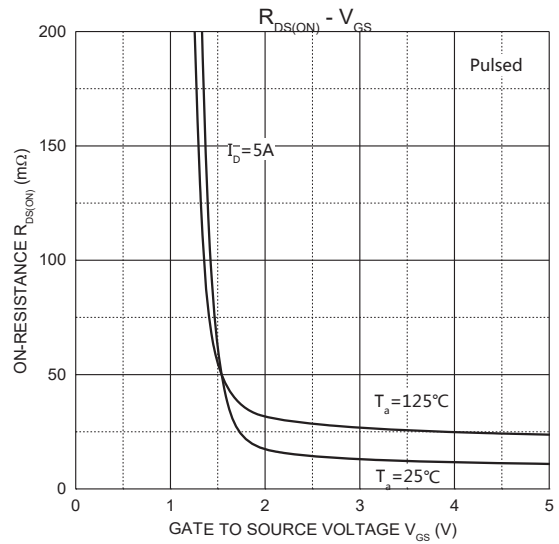
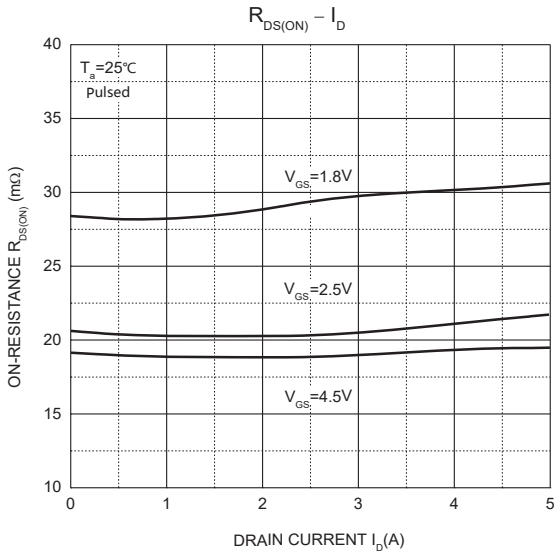
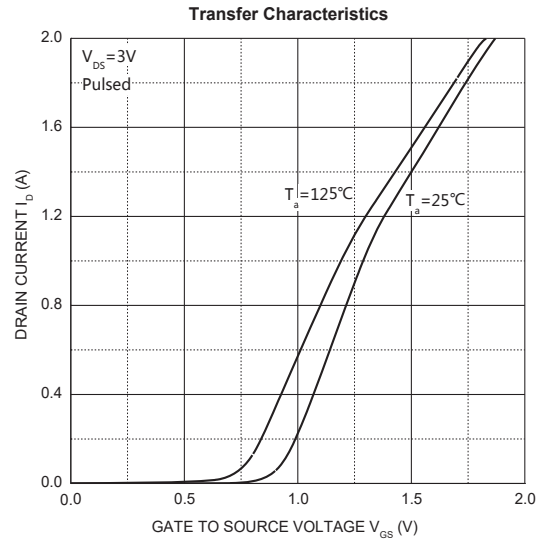
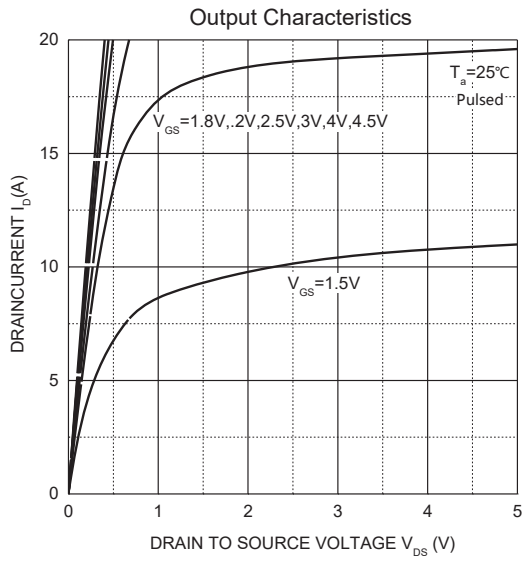
MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 0.1	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45	0.7	1.0	V
Drain-source on-resistance ³	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 5.0A$		17	24	m Ω
		$V_{GS} = 2.5V, I_D = 4.7A$		20	32	
		$V_{GS} = 1.8V, I_D = 4.3A$		30	42	
Forward tranconductance ³	g_{FS}	$V_{DS} = 10V, I_D = 5A$	6			S
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		865		pF
Output Capacitance	C_{oss}			105		
Reverse Transfer Capacitance	C_{rss}			55		
Gate resistance	R_g	$f = 1MHz$	0.5		4.8	Ω
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	$V_{GEN} = 5V, V_{DD} = 10V,$ $I_D = 4A, R_G = 1\Omega, R_L = 2.2\Omega$			10	ns
Turn-on rise time	t_r				20	
Turn-off delay time	$t_{d(off)}$				32	
Turn-off fall time	t_f				12	
Source-Drain Diode characteristics						
Diode Forward voltage ³	V_{DS}	$V_{GS} = 0V, I_S = 4A$		0.75	1.2	V

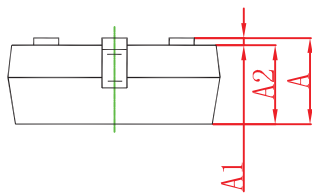
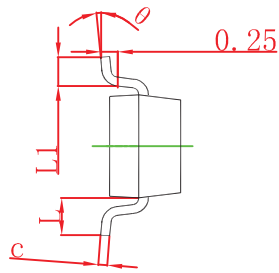
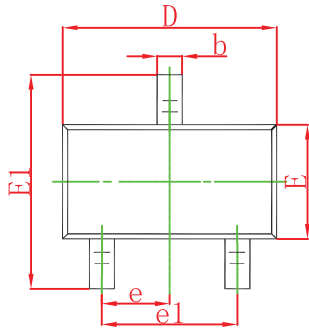
Notes:

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

Typical Electrical and Thermal Characteristics



SOT-23 Package Information

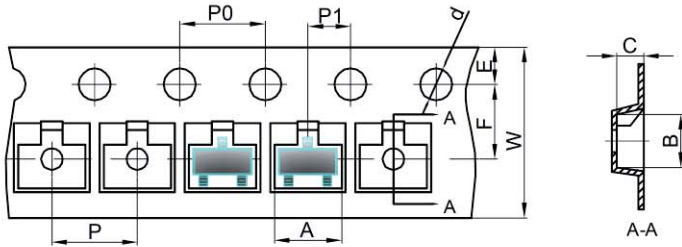


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037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

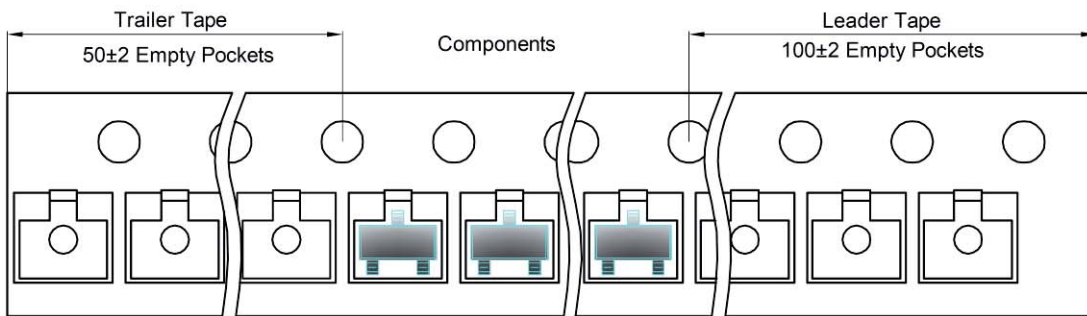
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

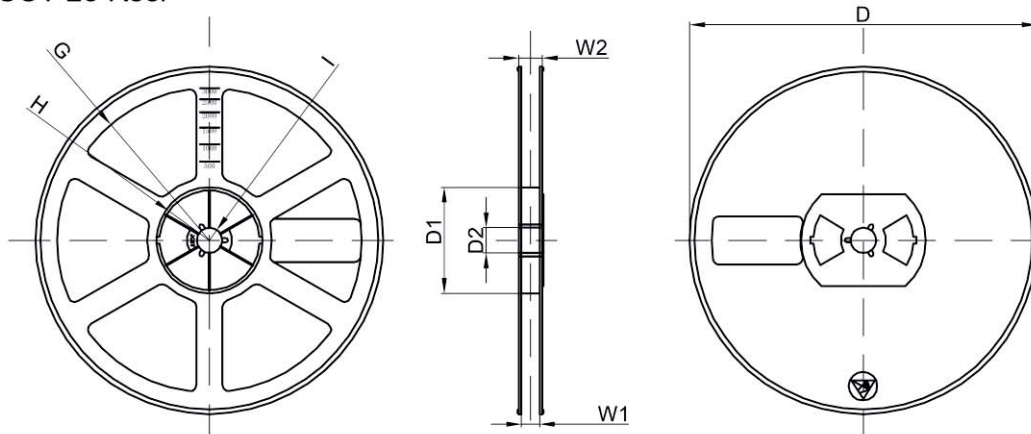


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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	