

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	20mΩ@10V	5.8A
	27mΩ@4.5V	

Feature

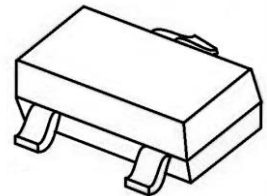
Trench Technology Power MOSFET

Low $R_{DS(ON)}$

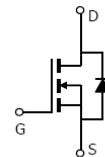
Low Gate Resistance

Low Gate Charge

SOT-23



Schematic diagram

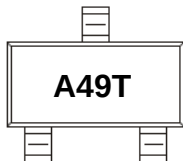


Application

Load Switch

PMW

MARKING:



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

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	30	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current ⁴	I_D	5.8	A
Pulsed Drain Current ^{1,4}	I_{DM}	23	A
Power Dissipation ^{3,4}	P_D	1	W
Thermal Resistance from Junction to Ambient ⁴	$R_{\theta JA}$	125	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

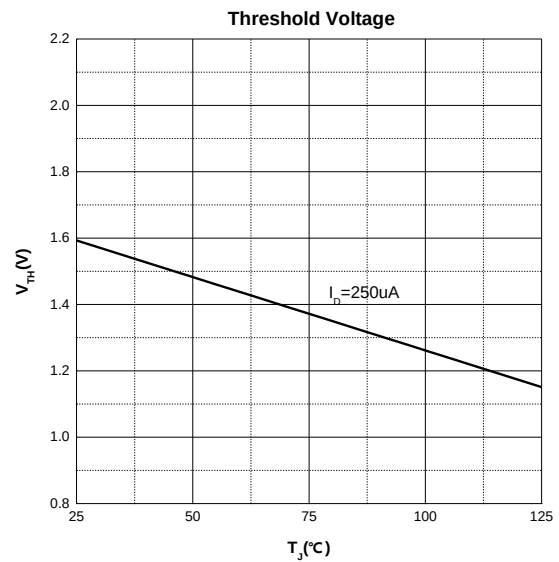
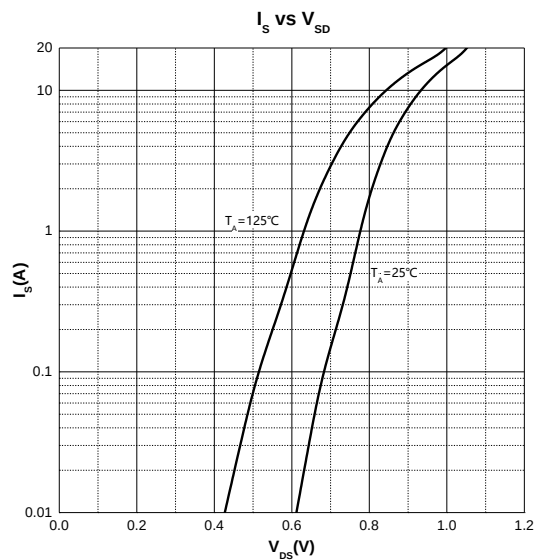
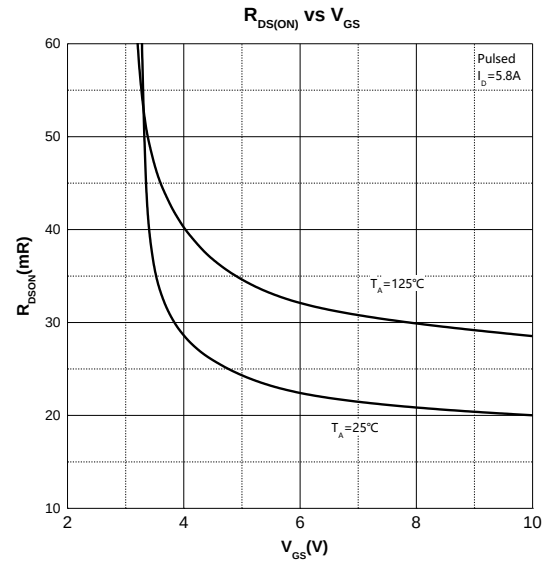
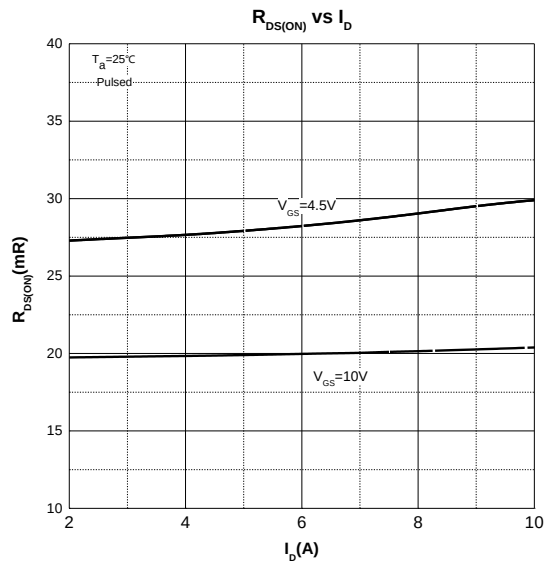
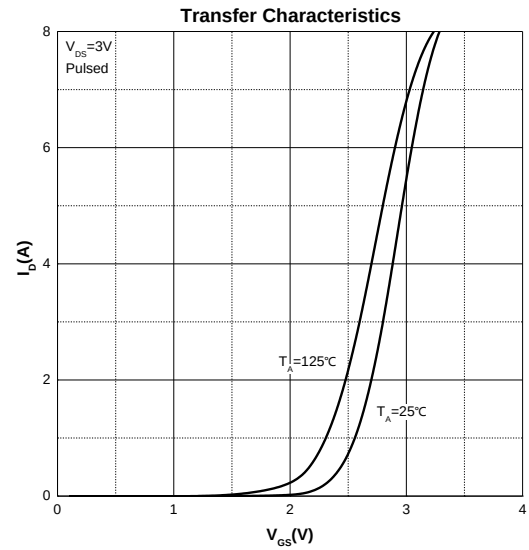
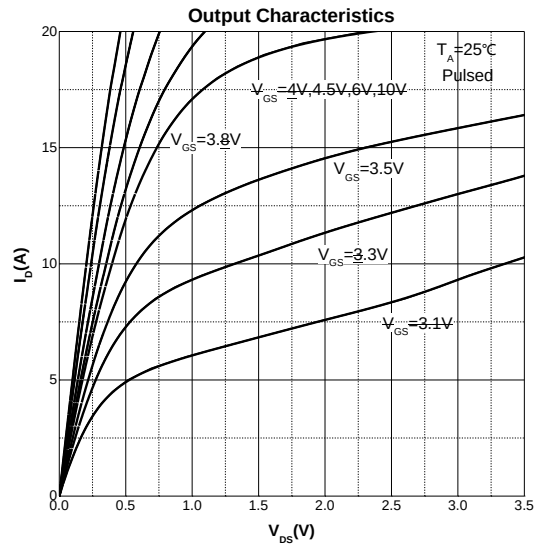
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

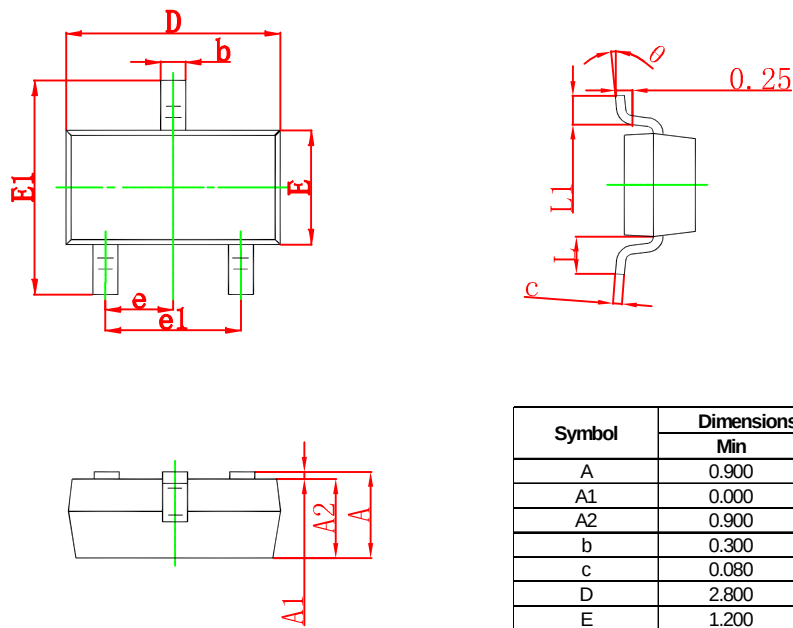
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics ²						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0	1.5	2.4	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 5.8A		20	30	mΩ
		V _{GS} = 4.5V, I _D = 4.8A		27	42	
Forward Transconductance	g _{FS}	V _{DS} = 5V, I _D = 5.8A	20			S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		583		pF
Output Capacitance	C _{oss}			67		
Reverse Transfer Capacitance	C _{rss}			52		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		2.0		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 15V, V _{GS} = 10V, I _D = 5A		9		nC
Gate-source Charge	Q _{gs}			1.6		
Gate-drain Charge	Q _{gd}			2.6		
Turn-on Delay Time	t _{d(on)}	V _{DD} = 15V, V _{GS} = 10V, R _L = 3Ω R _G = 3Ω		9		ns
Turn-on Rise Time	t _r			5		
Turn-off Delay Ttime	t _{d(off)}			25		
Turn-off Fall Time	t _f			7		
Source - Drain Diode Characteristics						
Diode Forward Voltage ²	V _{SD}	V _{GS} = 0V, I _S = 1A			1.2	V

Notes :

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

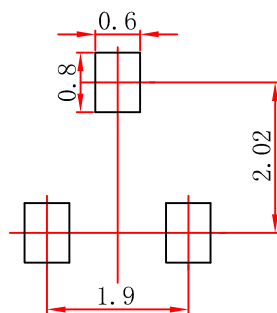
Typical Characteristics





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: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

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