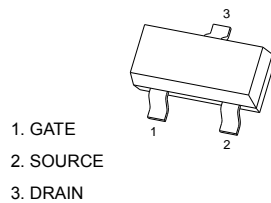


N-Channel Enhancement Mode Power MOSFET

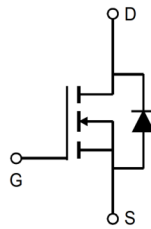
- **Features**

V_{DS}	$R_{DS(ON)MAX}$	I_D
30V	35mΩ@10V	5.8A
	40mΩ@4.5V	
	52mΩ@2.5V	

- **Pin Configurations**



SOT-23



- **General Description**

- Load/Power Switching
- Interfacing Switching

- **Absolute Maximum Ratings @ $T_A=25^\circ\text{C}$ unless otherwise noted**

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	± 12	V
Drain Current (Continuous) *AC	$T_C=25^\circ\text{C}$	I_D	5.8	A
Drain Current (Pulse) *B		I_{DM}	30	A
Thermal Resistance from Junction to Ambient ($t < 5\text{s}$)		$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Power Dissipation	$T_C=25^\circ\text{C}$	P_D	0.35	W
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	$^\circ\text{C}$

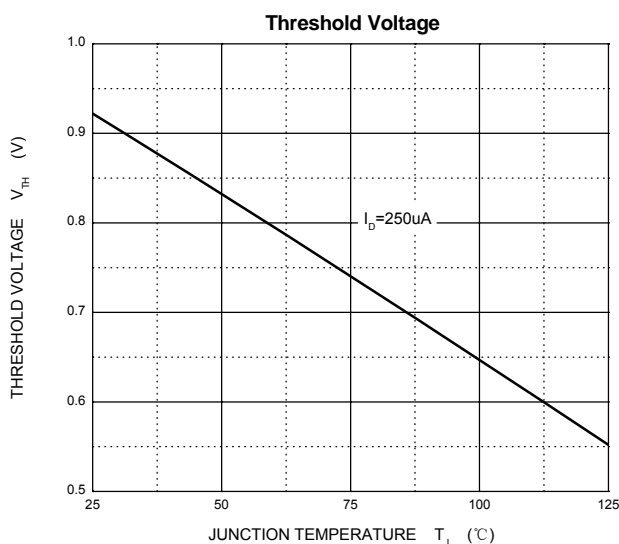
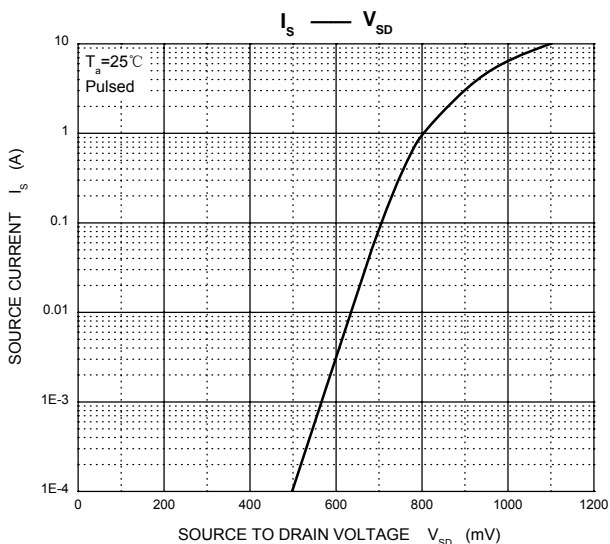
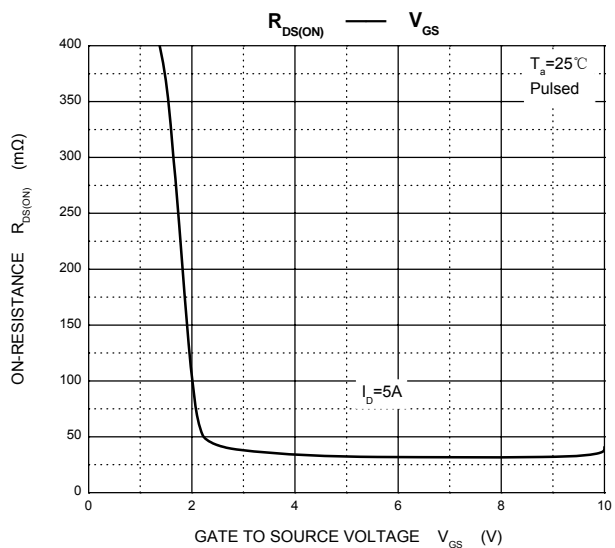
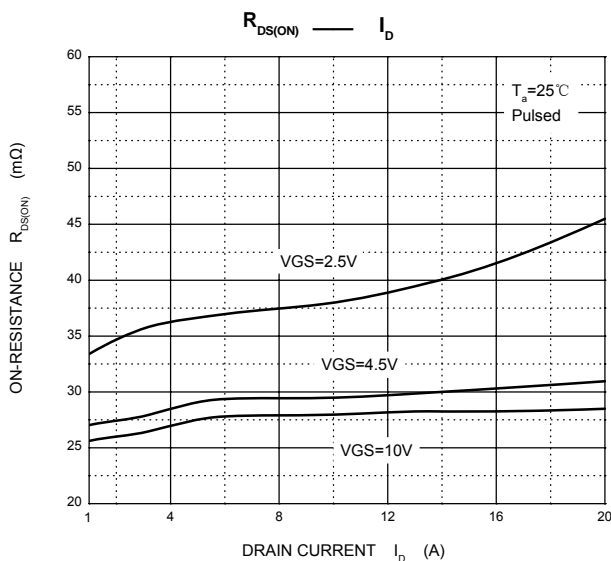
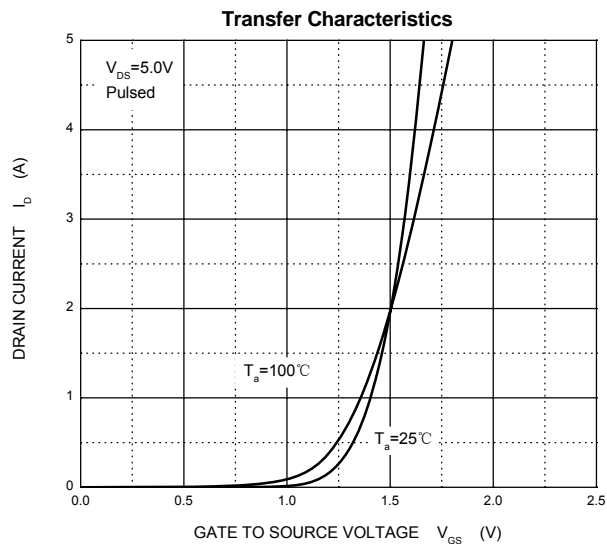
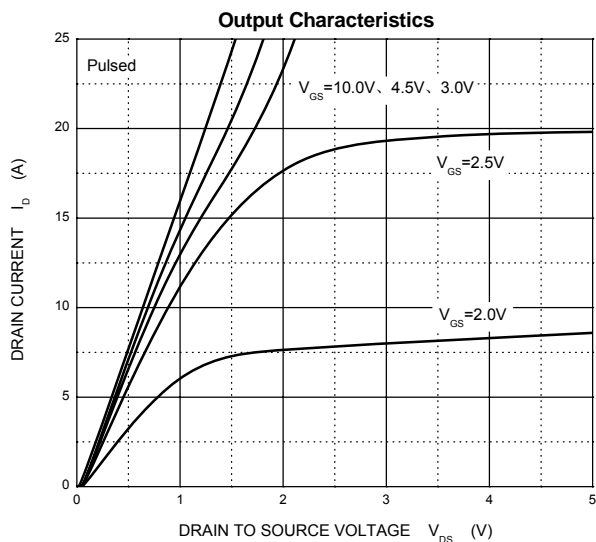
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
Gate-source leakage current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 100	nA
On characteristics						
Drain-source on-resistance (note 3)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5.8A$			35	m Ω
		$V_{GS} = 4.5V, I_D = 5A$			40	m Ω
		$V_{GS} = 2.5V, I_D = 4A$			52	m Ω
Forward transconductance	g_{FS}	$V_{DS} = 5V, I_D = 5A$	8			S
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.7		1.4	V
Dynamic Characteristics (note 4,5)						
Input capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$			1050	pF
Output capacitance	C_{oss}			99		pF
Reverse transfer capacitance	C_{rss}			77		pF
Gate resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$			3.6	Ω
Switching Characteristics (note 4,5)						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 15V,$ $R_L = 2.7\Omega, R_{GEN} = 3\Omega$			5	ns
Turn-on rise time	t_r				7	ns
Turn-off delay time	$t_{d(off)}$				40	ns
Turn-off fall time	t_f				6	ns
Drain-source diode characteristics and maximum ratings						
Diode forward voltage (note 3)	V_{SD}	$I_S = 1A, V_{GS} = 0V$			1	V

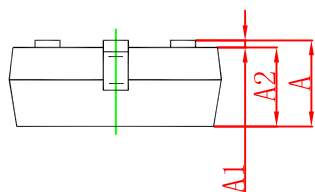
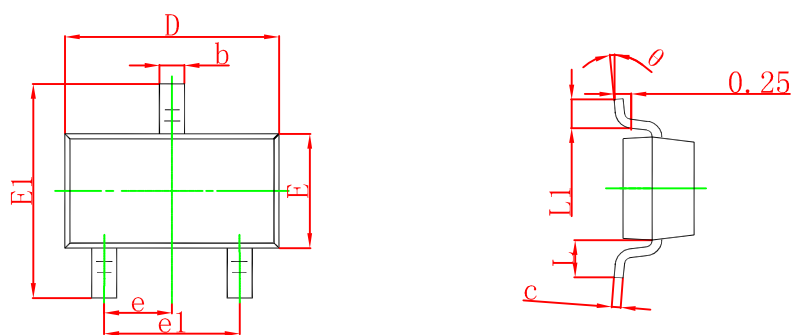
Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t < 5$ sec.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

Typical Characteristics

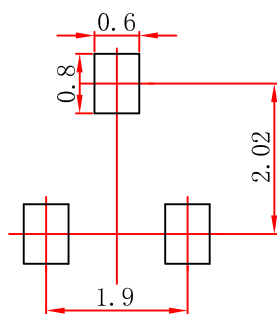


SOT-23 Package Outline Dimensions



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.