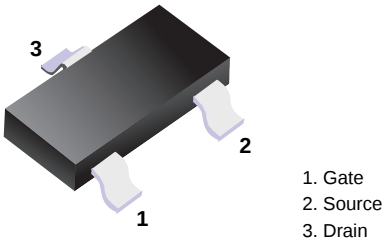


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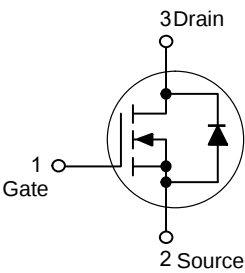
N- Enhancement Mode Field Effect Transistor



■ Features

- Fast Switching
- Low Gate Charge and $R_{DS(on)}$
- High power and current handling capability

■ Simplified outline(SOT-23)



■ Applications

- Battery protection
- Load switch
- Power management

■ Absolute Maximum Ratings $T_a = 25^{\circ}\text{C}$

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D	2	A
Maximum Power Dissipation	P_D	0.9	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^{\circ}\text{C}$
Thermal Resistance, Junction-to-Ambient ^{Note 2}	$R_{\theta JA}$	139	$^{\circ}\text{C/W}$

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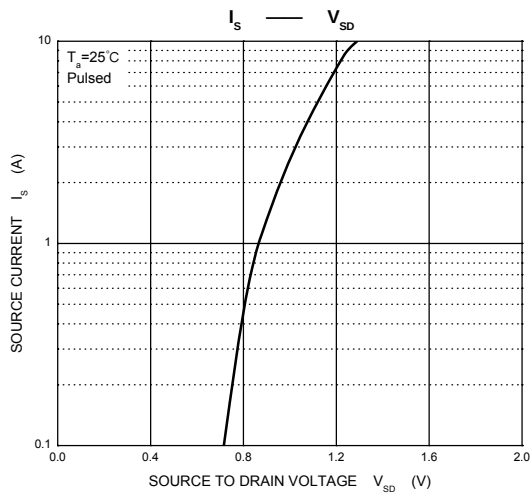
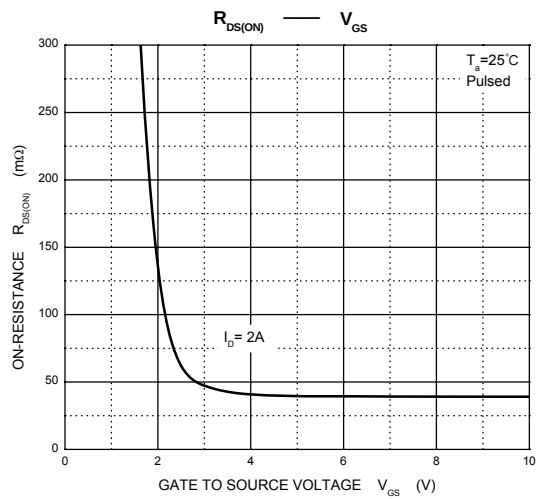
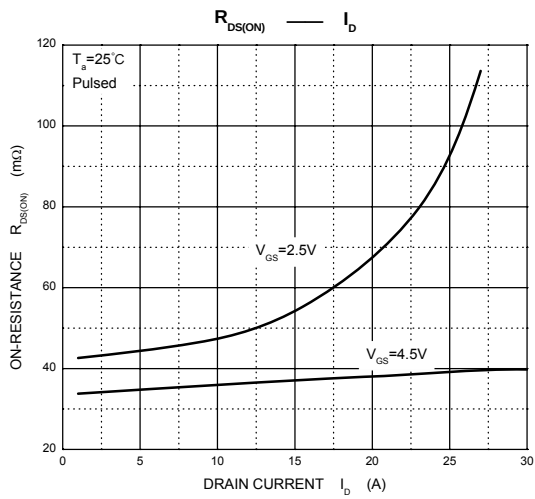
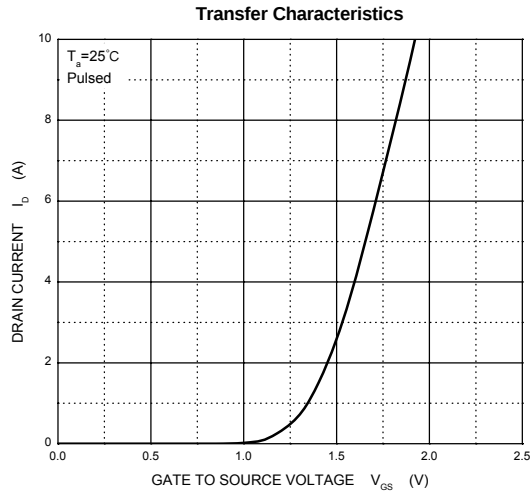
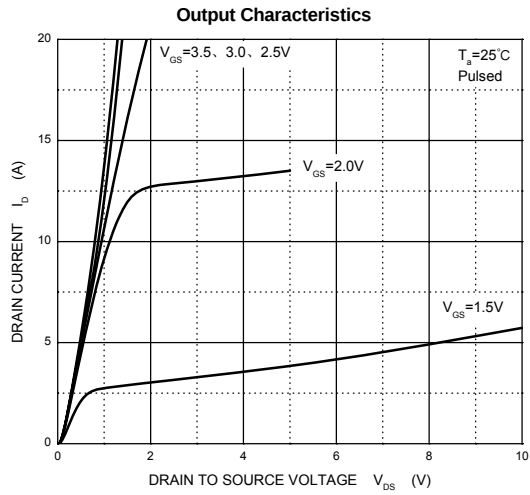
■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V I _D =250μA	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} =±12V,V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =250μA	0.4	0.75	1.2	V
Drain-Source On-State Resistance ^{Note3}	R _{DS(ON)}	V _{GS} =2.5V, I _D =1A	-	45	80	mΩ
		V _{GS} =4.5V, I _D =2A	-	35	50	mΩ
Forward Transconductance ^{Note3}	g _{FS}	V _{DS} =5V,I _D =2A	-	5	-	S
Dynamic Characteristics						
Input Capacitance	C _{ISS}	V _{DS} =10V,V _{GS} =0V, f=1.0MHz	-	260	-	pF
Output Capacitance	C _{OSS}		-	48	-	pF
Reverse Transfer Capacitance	C _{rSS}		-	27	-	pF
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =10V, R _L =3.3Ω V _{GS} =4.5V,R _{GEN} =6Ω	-	2.5	-	nS
Turn-on Rise Time	t _r		-	3.2	-	nS
Turn-Off Delay Time	t _{d(off)}		-	21	-	nS
Turn-Off Fall Time	t _f		-	3	-	nS
Total Gate Charge	Q _g	V _{DS} =10V,I _D =2A, V _{GS} =4.5V	-	2.9	5	nC
Gate-Source Charge	Q _{gs}		-	0.4	-	nC
Gate-Drain Charge	Q _{gd}		-	0.6	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage ^{Note 3}	V _{SD}	V _{GS} =0V,I _S =2A	-	-	1.2	V
Diode Forward Current ^{Note 2}	I _S		-	-	2	A

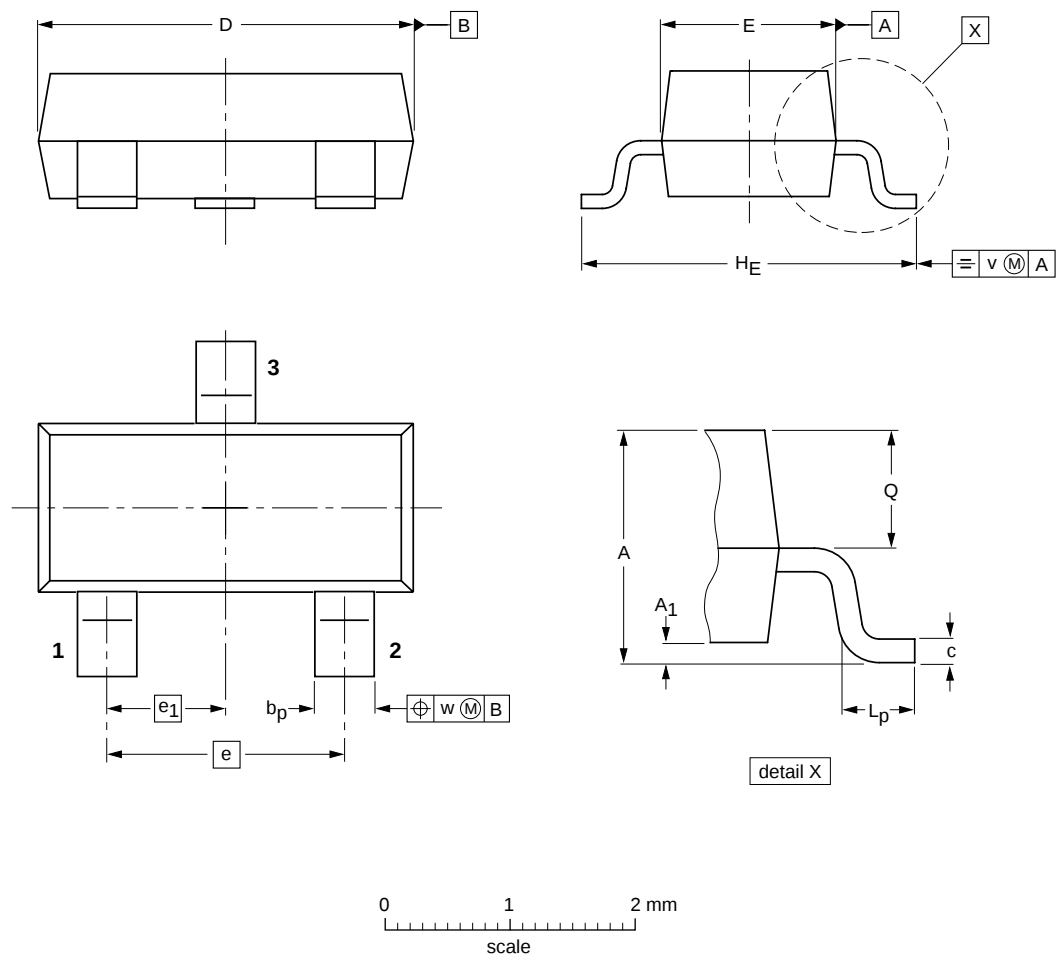
Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

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■ SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1