

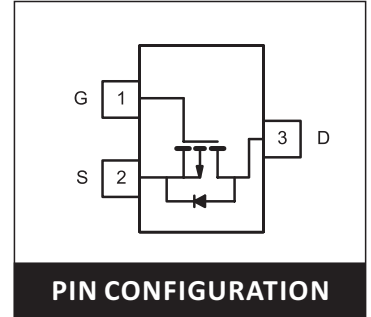
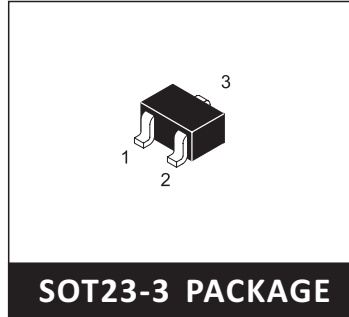
## P-Channel Enhancement Mode Mosfet

### FEATURES

- Higher Efficiency Extending Battery Life
- Miniature SOT23-3 Surface Mount Package
- Super high density cell design for extremely low RDS (ON)

### APPLICATIONS

- DC/DC Converter
- Load Switch
- Battery Powered System
- LCD Display inverter
- Power Management in Portable, Battery Powered Products



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

Parameter	Symbol	5 s	Steady State	Unit	
Drain-Source Voltage	VDS	-20		V	
Gate-Source Voltage	VGS	$\pm 8$			
Continuous Drain Current ( $T_J = 150\text{ }^\circ\text{C}$ ) <sup>a</sup>	ID	TA=25°C	-4.3	-3.5	A
		TA=80°C	-3.2	-2.5	
Pulsed Drain Current	IDM	-20			
Continuous Source Current (Diode Conduction) <sup>a</sup>	IS	-1.7	-1		
Maximum Power Dissipation <sup>a</sup>	PD	TA=25°C	1.25	0.75	W
		TA=80°C	0.7	0.42	
Operating Junction and Storage Temperature Range	TJ, Tstg	-55 to 150		°C	

a. Surface Mounted on FR4 Board using 1 in sq pad size, 2oz Cu.

### THERMAL RESISTANCE RATINGS

Parameter		Symbol	Typical	Maximum	Unit
Junction-to-Ambient Thermal Resistance <sup>b</sup>	t $\leq$ 5 s	R $\theta$ JA	75	100	°C/W
	Steady State		125	165	

b. Surface Mounted on FR4 Board using 1 in sq pad size, 2oz Cu.

**MOSFET ELECTRICAL CHARACTERISTICS**( $T_j=25\text{ }^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	BVDSS	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Zero Gate Voltage Drain Current	IDSS	$V_{DS} = -16V, V_{GS} = 0V$			-1	$\mu A$
Gate-Source leakage current	IGSS	$V_{GS} = \pm 8V, V_{DS} = 0V$			$\pm 100$	nA
<b>On Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}, I_D = -250\mu A$	-0.35	-0.63	-1	V
Static Drain-Source On-Resistance	RDS(on)	$V_{GS} = -4.5V, I_D = -3.3A$		52	61	mohm
		$V_{GS} = -2.5V, I_D = -2.8A$		65	71	mohm
Forward Transconductance	gFS	$V_{DS} = -5V, I_D = -3.3A$		3		S
<b>Dynamic Characteristics</b>						
Input Capacitance	Ciss	$V_{DS} = -6V, V_{GS} = 0V, f = 1.0\text{ MHz}$			700	pF
Output Capacitance	Coss				160	pF
Reverse Transfer Capacitance	Crss				120	pF
<b>Switching Characteristics</b>						
Turn-On Delay Time	td(on)	$V_{GS} = -4.5V, V_{DD} = -6V, I_D = -1.0A, RG = 6.0\text{ohm}$			25	ns
Turn-On Rise Time	tr				55	ns
Turn-Off Delay Time	td(off)				90	ns
Turn-Off Fall Time	tf	$V_{DS} = -6V, I_D = -3.3A, V_{GS} = -4.5V$			60	ns
Total Gate Charge	QG(TOT)			8	13	nC
Threshold gate charge	QG(TH)			0.2		nC
Gate-Source Charge	QGS			1.2		nC
Gate-Drain Charge	QGD			2.2		nC
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
Forward Diode Voltage	VSD	$V_{GS} = 0V, I_S = -1.6A$		-0.8		V

**PACKAGE OUTLINE DIMENSIONS**

SYMBOL	Millimeters		Inches	
	Min	Max	Min	Max
A	1.05	1.25	0.041	0.049
A1	0	0.1	0	0.004
A2	1.05	1.15	0.041	0.045
b	0.3	0.5	0.012	0.02
c	0.1	0.2	0.004	0.008
D	2.82	3.02	0.111	0.119
E	1.5	1.7	0.059	0.067
E1	2.65	2.95	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.8	2	0.071	0.079
L	0.3	0.6	0.012	0.024
$\theta$	0°	8°	0°	8°

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