

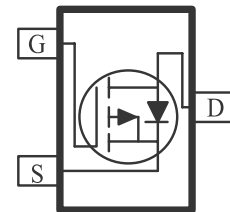
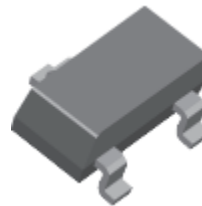
P - Channel 40V (D-S) MOSFET

These miniature surface mount MOSFETs utilize High Cell Density process. Low $r_{DS(on)}$ assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry. Typical applications are lower voltage application, power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

- Low $r_{DS(on)}$ Provides Higher Efficiency and Extends Battery Life
- Fast Switch
- Low Gate Charge
- Miniature SOT-23 Surface Mount Package Saves Board Space

PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-40	0.082 @ $V_{GS} = -10$ V	-3.2
	0.130 @ $V_{GS} = -4.5$ V	-2.6



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter		Symbol	Ratings	Units
Drain-Source Voltage		V_{DS}	-40	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ^a	$T_A = 25^\circ\text{C}$	I_D	± 3.2	A
	$T_A = 70^\circ\text{C}$		± 2.7	
Pulsed Drain Current ^b		I_{DM}	± 10	
Continuous Source Current (Diode Conduction) ^a		I_S	0.4	A
Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	1.25	W
	$T_A = 70^\circ\text{C}$		0.8	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

Parameter		Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	$t \leq 5$ sec	R_{THJA}	100	$^\circ\text{C/W}$
	Steady-State		150	

Notes

- Surface Mounted on 1" x 1" FR4 Board.
- Pulse width limited by maximum junction temperature

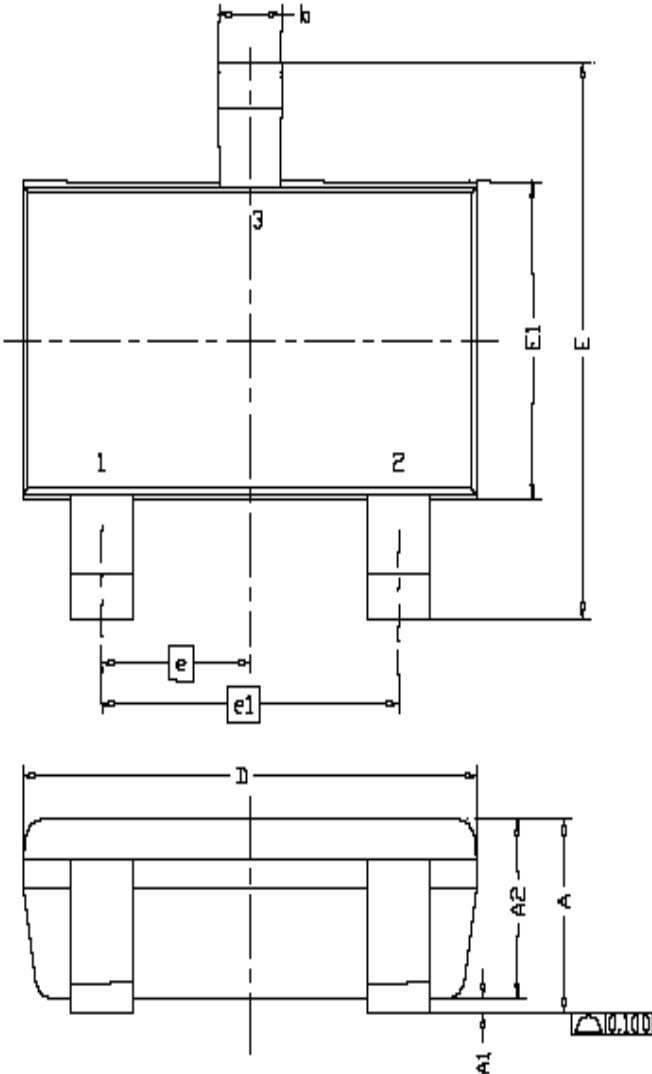
SPECIFICATIONS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Switch Off Characteristics						
Zero Gate Voltage Drain Current	IDSS	VDS = -32 V, VGS = 0 V			-1	μA
		VDS = -32 V, VGS = 0 V, TJ = 55°C			-10	
Gate-Body Leakage	IGSS	VDS = 0 V, VGS = ±20 V			±100	nA
Gate-Threshold Voltage	VGS(th)	VDS = VGS, ID = -250 uA	-1.0			V
On-State Drain Current ^A	ID(on)	VDS = -5 V, VGS = -4.5 V	-2			A
Drain-Source On-Resistance ^A	rDS(on)	VGS = -10 V, ID = -3.2 A			82	mΩ
		VGS = -4.5 V, ID = -2.6 A			130	
Forward Tranconductance ^A	gfs	VDS = -5 V, ID = -3.6 A		2		S
Diode Forward Voltage	VSD	IS = -0.4 A, VGS = 0 V		-0.70		V
Dynamic ^b						
Total Gate Charge	Qg	VDS = -10 V, VGS = -5 V, ID = -3.6 A		15		nC
Gate-Source Charge	Qgs			2.0		
Gate-Drain Charge	Qgd			2.0		
Turn-On Delay Time	td(on)	VDS = -15 V, ID = -1 A, RG = 50 Ω, VGEN = -10 V		10		ns
Rise Time	tr			2.8		
Turn-Off Delay Time	td(off)			53.6		
Fall-Time	tf			46		

Notes

- Pulse test: $PW \leq 300\mu\text{s}$ duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.

Package Information



DIM.	MILLIMETERS		
	MIN	NOM	MAX
A	0.935	0.95	1.10
A1	0.01	---	0.10
A2	0.85	0.90	0.925
b	0.30	0.40	0.50
c	0.10	0.15	0.25
D	2.70	2.90	3.10
E	2.60	2.80	3.00
E1	1.40	1.60	1.80
e	0.95 BSC		
e1	1.90 BSC		
L	0.30	0.40	0.60
L1	0.60REF		
L2	0.25BSC		
R	0.10	---	---
θ	0°	4°	8°
θ1	7°NOM		

