

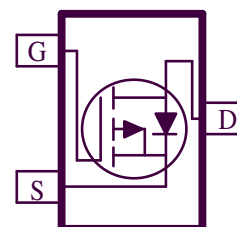
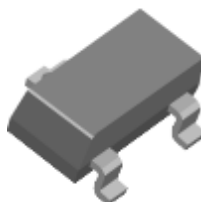
P-Channel 20-V (D-S) MOSFET

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and 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
- Low thermal impedance copper leadframe SOT-23 saves board space
- Fast switching speed
- High performance trench technology



RoHS
COMPLIANT
HALOGEN
FREE



PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (OHM)	I_D (A)
-20	0.043 @ $V_{GS} = -4.5V$	-4.5
	0.054 @ $V_{GS} = -2.5V$	-4.0
	0.120 @ $V_{GS} = -1.8V$	-2.7

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Ratings	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current ^a	$T_A = 25^\circ C$	I_D	A
	$T_A = 70^\circ C$		
Pulsed Drain Current ^b	I_{DM}	-10	
Power Dissipation ^a	$T_A = 25^\circ C$	P_D	W
	$T_A = 70^\circ C$		
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ C$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	R_{THJA}	100	$^\circ C/W$
		Steady-State	

Notes

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

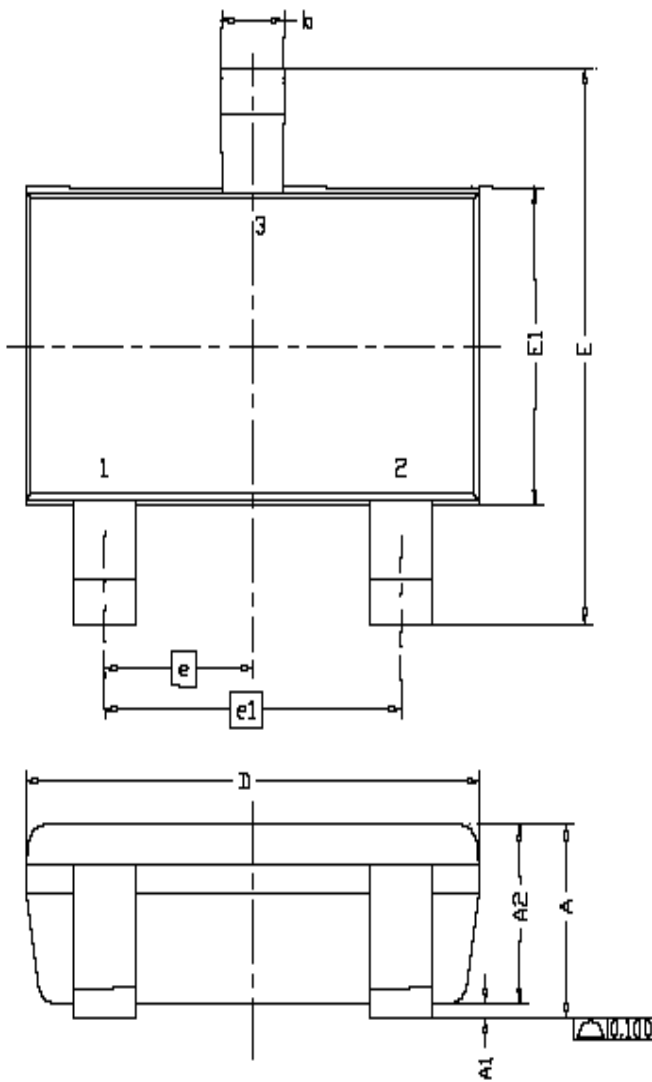
SPECIFICATIONS (T _A = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 uA	-0.7			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -16 V, V _{GS} = 0 V			-1	uA
		V _{DS} = -16 V, V _{GS} = 0 V, T _J = 55°C			-10	
On-State Drain Current ^A	I _{D(on)}	V _{DS} = -5 V, V _{GS} = -4.5 V	-10			A
Drain-Source On-Resistance ^A	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -3.6 A			43	mΩ
		V _{GS} = -2.5 V, I _D = -3.1 A			54	
		V _{GS} = -1.8 V, I _D = -2.7 A			120	
Forward Transconductance ^A	g _{fs}	V _{DS} = -5 V, I _D = -1.25 A		12		S
Diode Forward Voltage	V _{SD}	I _S = -0.46 A, V _{GS} = 0 V		-0.60		V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = -5 V, V _{GS} = -4.5 V, I _D = -2.4 A		12.0		nC
Gate-Source Charge	Q _{gs}			2.0		
Gate-Drain Charge	Q _{gd}			2.0		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -10 V, I _L = -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω		6.5		ns
Rise Time	t _r			20		
Turn-Off Delay Time	t _{d(off)}			31		
Fall-Time	t _f			21		

Notes

- Pulse test: PW ≤ 300us duty cycle ≤ 2%.
- Guaranteed by design, not subject to production testing.

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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	---	---
theta	0°	4°	8°
theta1	7°NOM		

