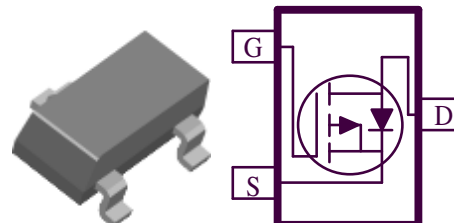


P-Channel 20-V (D-S) MOSFET

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

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (OHM)	I_D (A)
-20	0.130 @ $V_{GS} = -4.5V$	-2.6
	0.190 @ $V_{GS} = -2.5V$	-2.1



RoHS
COMPLIANT
HALOGEN
FREE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current ^a	I_D	$T_A=25^\circ C$	-2.6
		$T_A=70^\circ C$	-1.5
Pulsed Drain Current ^b	I_{DM}	-10	A
Continuous Source Current (Diode Conduction) ^a	I_S	± 1.6	A
Power Dissipation ^a	P_D	$T_A=25^\circ C$	1.25
		$T_A=70^\circ C$	0.8
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}	t \leq 5 sec	100
		Steady-State	166

Notes

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

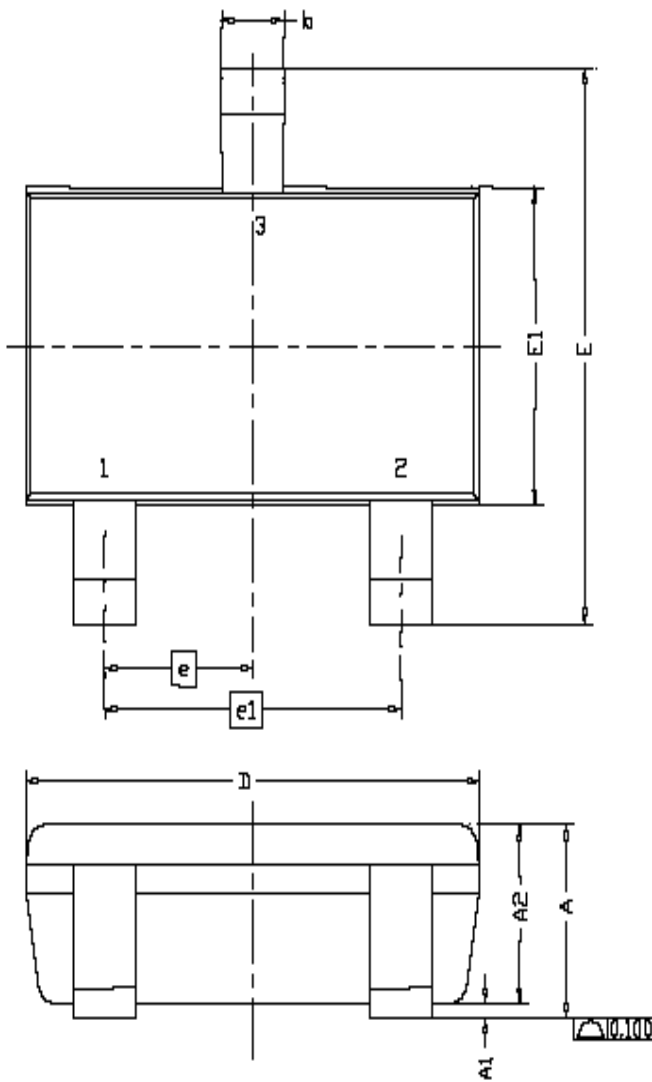
SPECIFICATIONS (T _A = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 uA	-0.4		-1	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = +/-8 V			±10	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -16 V, V _{GS} = 0 V			-1	μA
		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	-3			A
Drain-Source On-Resistance ^A	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -1 A			0.130	Ω
		V _{GS} = -2.5 V, I _D = -1 A			0.190	
Forward Transconductance ^A	g _s	V _{DS} = -5 V, I _D = -1 A		3		S
Diode Forward Voltage	V _{SD}	I _S = -1 A, V _{GS} = 0 V		-0.70		V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = -5 V, V _{GS} = -4.5 V, I _D = -1 A		3		nC
Gate-Source Charge	Q _{gs}			0.6		
Gate-Drain Charge	Q _{gd}			0.9		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -5 V, R _L = 5 OHM, V _{GEN} = -4.5 V, R _G = 6 OHM		9		ns
Rise Time	t _r			10		
Turn-Off Delay Time	t _{d(off)}			30		
Fall-Time	t _f			10		

Notes

- a. Pulse test: PW ≤ 300us duty cycle ≤ 2%.
- b. 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	---	---
θ	0°	4°	8°
θ1	7°NOM		

