

20V N-Channel Enhancement Mode MOSFET

VDS = 20V

RDS(ON), Vgs@4.5V, Ids@5.0A < 31mΩ

RDS(ON), Vgs@2.5V, Ids@4.5A < 37mΩ

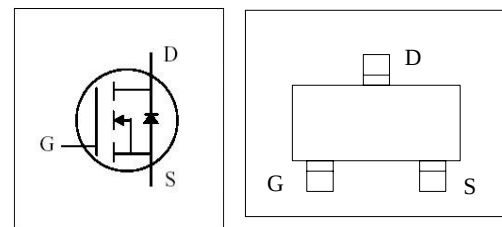
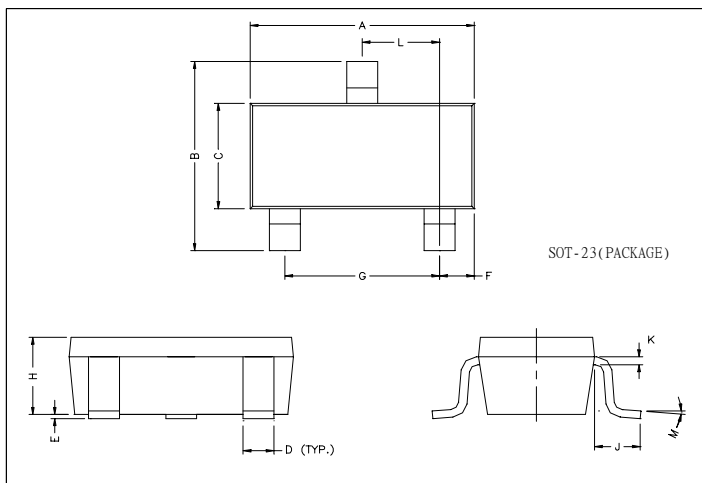
RDS(ON), Vgs@1.8V, Ids@3.9A < 85mΩ

Features

Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance

Package Dimensions



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	1.90	REF.
B	2.40	2.80	H	1.00	1.30
C	1.40	1.60	K	0.10	0.20
D	0.35	0.50	J	0.40	-
E	0	0.10	L	0.85	1.15
F	0.45	0.55	M	0°	10°

Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

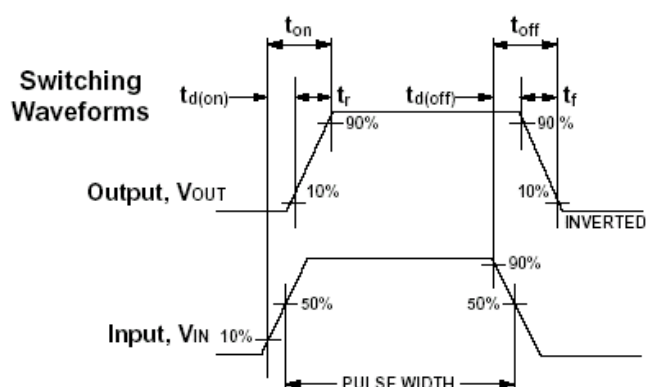
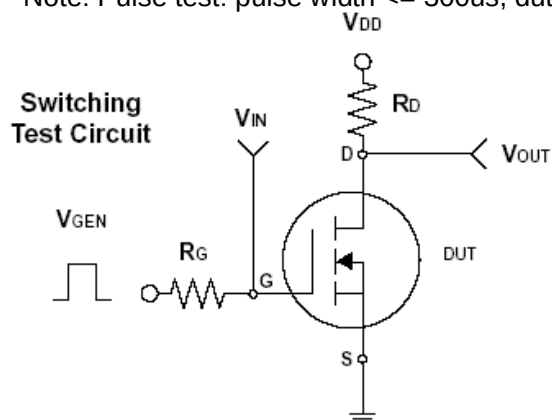
Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V _{DS}	20	V
Gate-Source Voltage		V _{GS}	± 8	
Continuous Drain Current		I _D	4.9	A
Pulsed Drain Current		I _{DM}	15	
Maximum Power Dissipation	TA = 25°C	P _D	0.75	W
	TA = 75°C		0.48	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted)		R _{θJA}	140	°C/W

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ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250uA	20			V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = 4.5V, I _D = 5.0A		21.0	31.0	mΩ
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = 2.5V, I _D = 4.5A		24.0	37.0	
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = 1.8V, I _D = 4.0A		50.0	85.0	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = 250uA	0.4		1	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V			1	uA
Gate Body Leakage	I _{GSS}	V _{GS} = ± 8V, V _{DS} = 0V			± 100	nA
Forward Transconductance	g _{fs}	V _{DS} = 15V, I _D = 5.0A		40	—	S
Dynamic						
Total Gate Charge	Q _g	V _{DS} = 10V, I _D = 5.0A V _{GS} = 4.5V		11.2	14	nC
Gate-Source Charge	Q _{gs}			1.4		
Gate-Drain Charge	Q _{gd}			2.2		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10V, RL=10Ω I _D = 1A, V _{GEN} = 4.5V R _G = 6Ω		15	25	ns
Turn-On Rise Time	t _r			40	60	
Turn-Off Delay Time	t _{d(off)}			48	70	
Turn-Off Fall Time	t _f			31	45	
Input Capacitance	C _{iss}	V _{DS} = 8V, V _{GS} = 0V f = 1.0 MHz		500		pF
Output Capacitance	C _{oss}			300		
Reverse Transfer Capacitance	C _{rss}			140		
Source-Drain Diode						
Max. Diode Forward Current	I _S				1.7	A
Diode Forward Voltage	V _{SD}	I _S = 1.8A, V _{GS} = 0V			1.2	V

Note: Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$



Typical Characteristics ($T_J = 25^\circ\text{C}$ Noted)

