



SOT-23 Plastic-Encapsulate MOSFETS

N-Channel 30-V(D-S) MOSFET

FEATURE

TrenchFET Power MOSFET

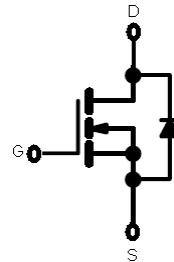
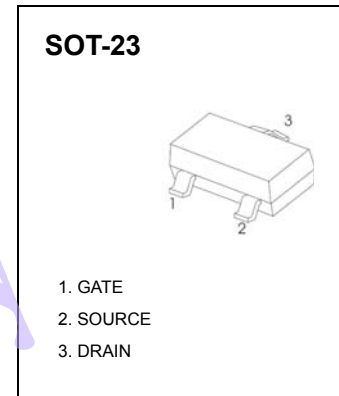
APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter
- **Pb-Free package is available**

RoHS product for packing code suffix "G"

Halogen free product for packing code suffix "H"

MARKING: S6



Maximum ratings (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current ($T_J=150^{\circ}\text{C}$) ^{a,b}	I_D	3.16	A
Pulsed Drain Current	I_{DM}	20	
Continuous Source Current(Diode Conduction) ^{a,b}	I_S	0.62	
Maximum Power Dissipation ^{a,b}	P_D	0.75	W
Thermal Resistance from Junction to Ambient ($t \leq 5\text{s}$)	$R_{\theta JA}$	100	$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^{\circ}\text{C}$

Notes :

a. Surface Mounted on 1" × 1" FR4 board, $t \leq 5\text{s}$.

b. Pulse width limited by maximum junction temperature.



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Electrical characteristics (at T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DS}	V _{GS} = 0V, I _D = 250μA	30			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0		3.0	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0V			0.5	μA
Drain-Source On-Resistance ^a	R _{DS(on)}	V _{GS} = 10V, I _D = 3.5A		0.038	0.047	Ω
		V _{GS} = 4.5V, I _D = 2.8A		0.052	0.065	
Forward Transconductance ^a	g _{fs}	V _{DS} = 4.5V, I _D = 2.5A		7.0		S
Diode Forward Voltage	V _{SD}	I _S = 1.25A, V _{GS} = 0V		0.8	1.2	V
Dynamic						
Gate Charge	Q _g	V _{DS} = 15V, V _{GS} = 5V, I _D = 2.5A		3.0	4.5	nC
Total Gate Charge	Q _{gt}	V _{DS} = 15V, V _{GS} = 10V, I _D = 2.5A		6	9	
Gate-Source Charge	Q _{gs}			1.6		
Gate-Drain Charge	Q _{gd}			0.6		
Gate Resistance	R _g	f = 1.0MHz	2.5	5	7.5	Ω
Input Capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		305		pF
Output Capacitance	C _{oss}			65		
Reverse Transfer Capacitance	C _{rss}			29		
Switching						
Turn-On Delay Time	t _{d(on)}	V _{DD} = 15V, R _L = 15Ω, I _D ≈ 1A, V _{GEN} = 10V, R _g = 6Ω		7	11	ns
Rise Time	t _r			12	18	
Turn-Off Delay Time	t _{d(off)}			14	25	
Fall Time	t _f			6	10	

Notes :

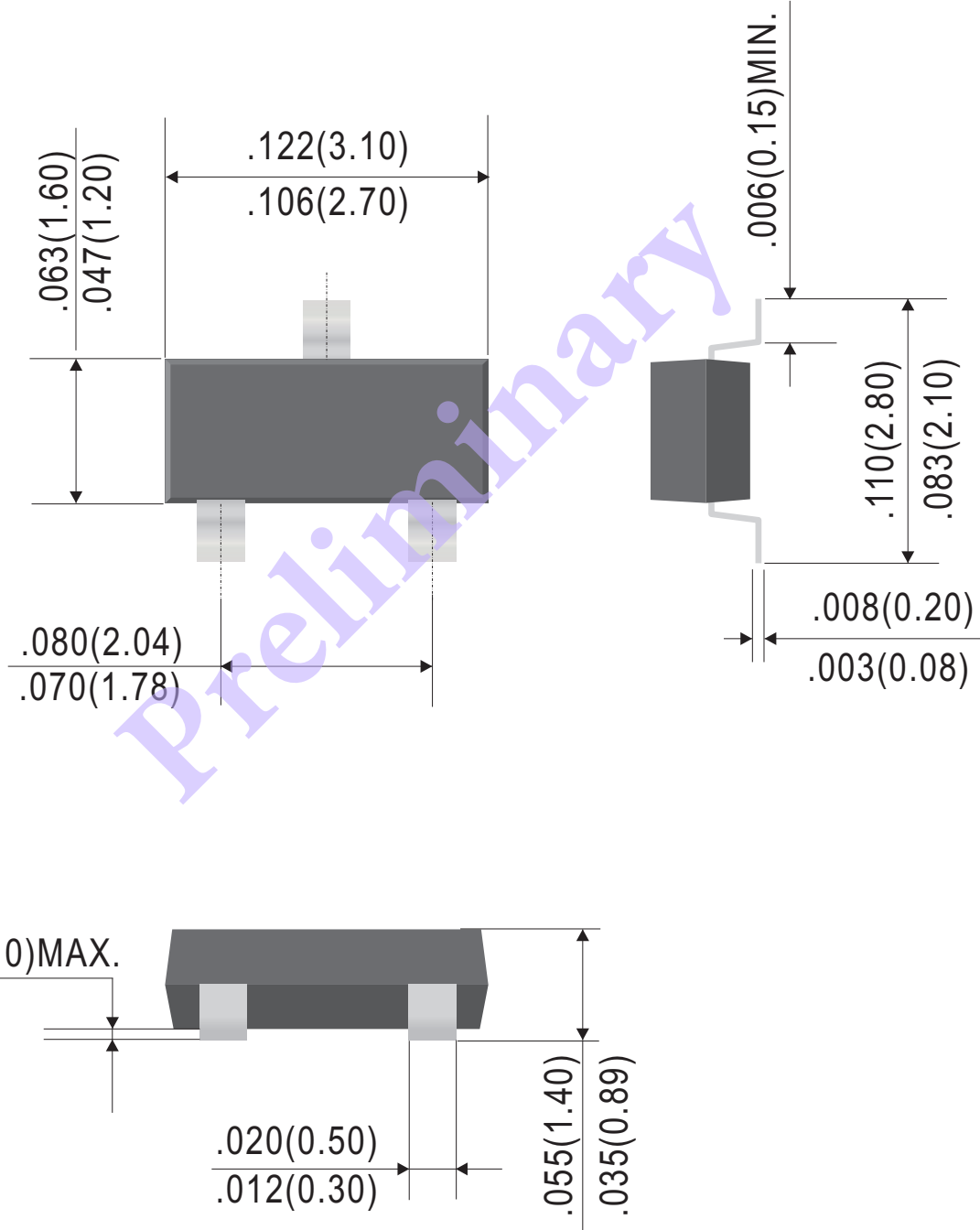
a.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.



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Outline Drawing

SOT-23



Dimensions in inches and (millimeters)