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

FEATURES

- Advance Trench Process Technology
- High Density Cell Design for Ultra Low On-resistance
- ESD Protected

Application

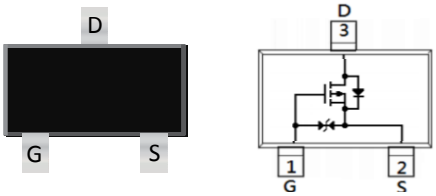
- Portable Devices
- Consumer Electronics

Mechanical

- Case: SOT-23-3L Package

PRODUCTY SUMMARY			
V_{DS}	$R_{DS(on)}$ m(Ω)		I_D(A)
-20	27	@V_{GS}=-4.5V	-4.8
	38	@V_{GS}=-2.5V	-4.3

SOT-23-3L



Packing Information

Package	Packing
SOT-23-3L	3Kpcs / 7” Reel

Maximum Ratings (T_A=25°C unless otherwise specified)			
Parameter	**Symbol**	**Limit**	**Unit**
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±8	V
Continuous Drain Current [1)4)]	I_D	-6.2	A
Maximum Power Dissipation	P_D	0.5	W
Pulsed Drain Current [2)]	I_{DM}	-24.8	A
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C

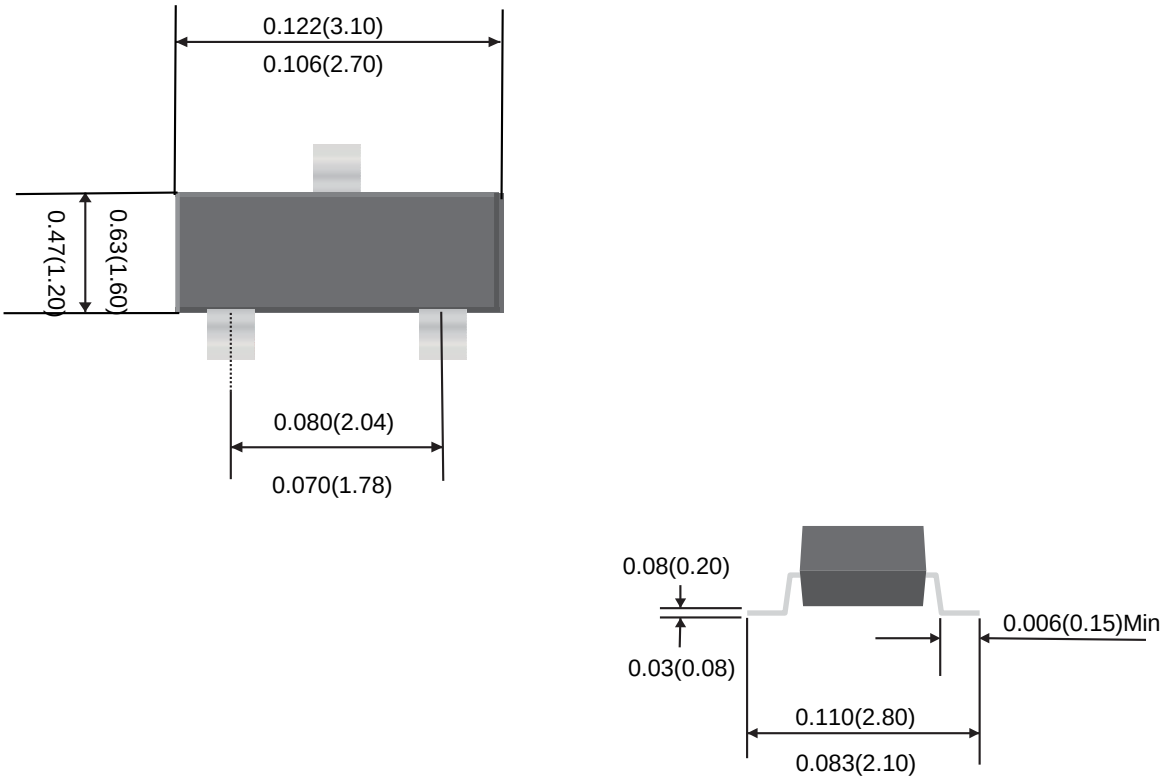
Typical Thermal Resistance			
Parameter	**Symbol**	**Limit**	**Unit**
Junction-to-Ambient Thermal Resistance	$R_{\theta JA}$	100	°C/W

Note:
RθJA is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper

Electrical Characteristics (T_A = 25°C UNLESS OTHERWISE NOTED)						
Characteristics	Symbol	Test Condition	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	B_{VDSS}	V_{GS} = 0V, I_D =-250uA	-20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250uA	-0.5	-0.65	-0.84	V
Drain-Source On-State Resistance	R_{DS}(on)	V_{GS}=-4.5V, I_D=-3.0A		23	27	mΩ
		V_{GS}=-2.5V, I_D=-3.0A		32	38	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V		-	-1.0	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V		–	±100	nA
Dynamic [3]						
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-9.5A, V_{GS}=-5V	-	30	-	nC
Gate-Source Charge	Q_{gs}		-	6	-	nC
Gate-Drain Charge	Q_{gd}		-	4	-	nC
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1.0MHZ	-	2158	-	pF
Output Capacitance	C_{oss}		-	845	-	pF
Reverse Transfer Capacitance	C_{rss}		-	230	-	pF
Switching						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-10V, I_D=-9.5A, V_{GS}=-4.5V,RG=6Ω,R_D=1.05Ω	-	25	-	ns
Turn-On Rise Time	t_r		-	500	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	70	-	ns
Turn-Off Fall Time	t_f		-	300	-	ns
Drain-Source Diode						
Maximum Continuous Body Diode Forward Current	I_S	V_G=V_D=0V , Force Current	-	-	-1.2	A
Diode Forward Voltage	V_{SD}	IS=-1.0A, VGS=0V	-	-	-1.5	V

NOTES :
1. Pulse width<300us, Duty cycle<2%.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature T_J(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J=25°C.
4. The maximum current rating is package limited.
5. RQJA is the sum of the junctiontocase and casetoambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. Mounted on a 1 inch2 with 2oz.square pad of copper.
6. Guaranteed by design, not subject to production testing.

Package Outline Dimensions (inches and millimeters)



Marking Information