

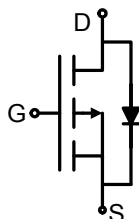
P-Channel Enhancement Mode MOSFET

FEATURES

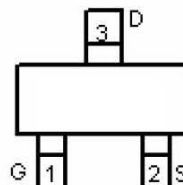
- ◆ $R_{DS(on)} < 900 \text{ m}\Omega @ V_{GS} = -10 \text{ V}$
- ◆ $R_{DS(on)} < 1000 \text{ m}\Omega @ V_{GS} = -4.5 \text{ V}$
- ◆ Gross Die = 12000

APPLICATIONS

- ◆ Battery Charge
- ◆ Load Switching
- ◆ Power Converter



Schematic diagram



Marking and pin Assignment

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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-150	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous @ $T_A = 25^\circ\text{C}$	I_D	-1	A
Drain Current-Pulsed @ $T_A = 25^\circ\text{C}$ ^{Note1}	I_{DM}	-3	A
Maximum Power Dissipation	P_D	2.1	W
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$
Operating Junction Temperature Range	T_J	-55 to +150	$^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	60	$^\circ\text{C/W}$

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V , I _{DS} =-250μA	-150	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} =0V , V _{DS} =-120V	-	-	-1	uA
Gate-Body Leakage	I _{GSS}	V _{GS} =±20V , V _{DS} =0V	-	-	±100	nA
ON Characteristics						
Gate Threshold Voltage	V _{TH}	V _{DS} =V _{GS} , I _{DS} =-250μA	-1	-	-2.0	V
Drain-Source On-State Resistance	R _{DS}	V _{GS} =-10V , I _{DS} =-1A	-	780	900-	mΩ
		V _{GS} =-4.5V , I _{DS} =-1A	-	880	1000-	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-75V V _{GS} =0V Freq.=1MHz	-	750	-	pF
Output Capacitance	C _{oss}		-	48	-	
Reverse Transfer Capacitance	C _{rss}		-	20	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{DS} =-75V V _{GS} =-10V R _G =3Ω	-	12	-	ns
Rise Time	t _r		-	32	-	
Turn-Off Delay Time	t _{d(off)}		-	30	-	
Fall Time	t _f		-	10	-	
Total Gate Charge at 10V	Q _g	V _{DS} =-75V	-	20	-	nC
Gate to Source Gate Charge	Q _{gs}	V _{GS} =-10V	-	5	-	
Gate to Drain “Miller” Charge	Q _{gd}	I _{DS} =-1A	-	8	-	
Drain-Source Diode Characteristics						
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V , I _S =-1A	-0.4	-	-1.0	V

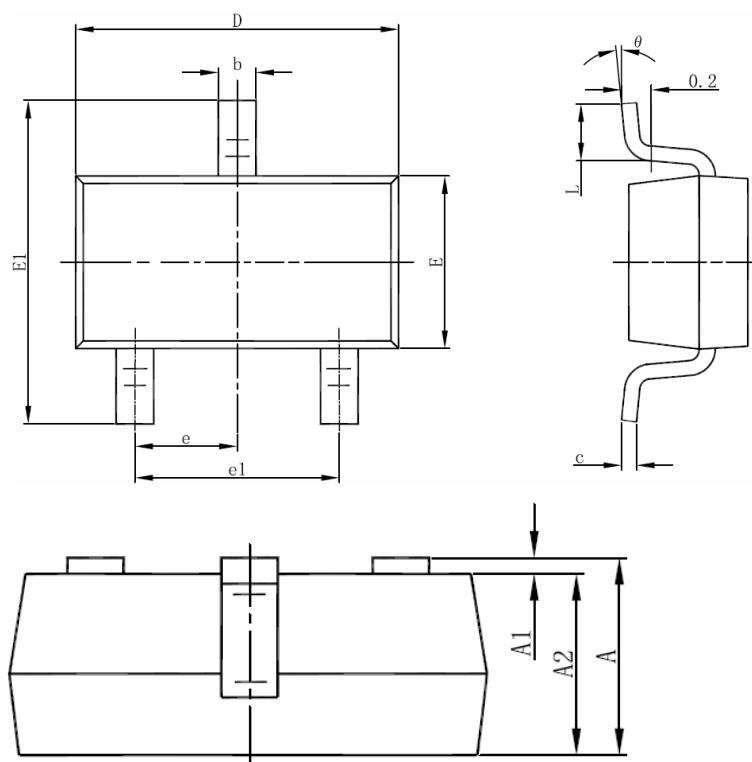
Notes:

1. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

2. R_{θJA} 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.

R_{θJC} is guaranteed by design while R_{θCA} is determined by the user's board design. R_{θJA} shown below for single device operation on FR-4 in still air.

SOT-23-3L PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

NOTES

1. All dimensions are in millimeters.
2. Tolerance $\pm 0.10\text{mm}$ (4 mil) unless otherwise specified
3. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 5 mils.
4. Dimension L is measured in gauge plane.
5. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.