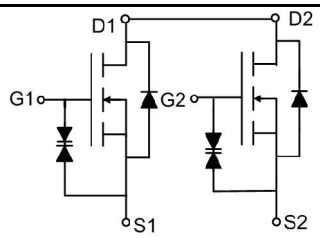
SSF2418B

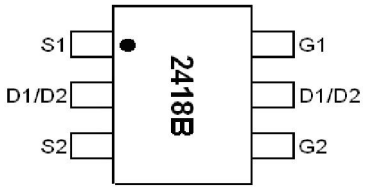
20V Dual N-Channel MOSFET

DESCRIPTION

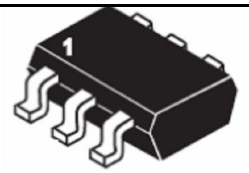
The SSF2418B uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a load switch. It is ESD protected.



Schematic Diagram



Marking and Pin Assignment



SOT23-6 Top View

GENERAL FEATURES

- V_{DS} = 20V,I_D =6A
  $R_{DS(ON)}$ < 30mΩ @ V_{GS}=2.5V
  $R_{DS(ON)}$ < 26mΩ @ V_{GS}=3.1V
  $R_{DS(ON)}$ < 22mΩ @ V_{GS}=4.0V
  $R_{DS(ON)}$ < 21mΩ @ V_{GS}=4.5V

  ESD Rating：2000V HBM

- High Power and current handing capability
- Lead free product
- Surface Mount Package

APPLICATIONS

- Battery protection
- Load switch
- Power management

PACKAGE MARKING AND ORDERING INFORMATION

Device Marking	Device	Device Package	Reel Size	Tape Width	Quantity
2418B	SSF2418B	SOT23-6	Ø330mm	12mm	3000 units

ABSOLUTE MAXIMUM RATINGS (T_A=25℃unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous@ Current-Pulsed (Note 1)	I_D	6	A
	I_{DM}	30	A
Maximum Power Dissipation	P_D	1.3	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

THERMAL CHARACTERISTICS

Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	95	℃/W

ELECTRICAL CHARACTERISTICS (T_A=25℃unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V			1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±12V,V_{DS}=0V			±10	uA
ON CHARACTERISTICS (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	0.5		1	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=6A		18	21	mΩ
		V_{GS}=4.0V, I_D=5.5A		19	22	mΩ
		V_{GS}=3.1V, I_D=5A		21	26	mΩ
		V_{GS}=2.5V, I_D=4A		25	30	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5V,I_D=6A		7		S
DYNAMIC CHARACTERISTICS (Note4)						
Input Capacitance	C_{lss}	V_{DS}=10V,V_{GS}=0V, F=1.0MHz		650		PF
Output Capacitance	C_{oss}			170		PF
Reverse Transfer Capacitance	C_{rss}			150		PF
SWITCHING CHARACTERISTICS (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=10V,I_D=1A V_{GS}=4.5V,R_{GEN}=10Ω		20		nS
Turn-on Rise Time	t_r			50		nS
Turn-Off Delay Time	$t_{d(off)}$			64		nS
Turn-Off Fall Time	t_f			40		nS
Total Gate Charge	Q_g	V_{DS}=10V,I_D=6A, V_{GS}=4.5V		8		nC
Gate-Source Charge	Q_{gs}			1.5		nC
Gate-Drain Charge	Q_{gd}			2		nC
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=1A		0.76	1	V

NOTES:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

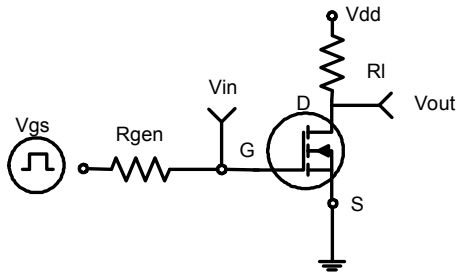


Figure 1: Switching Test Circuit

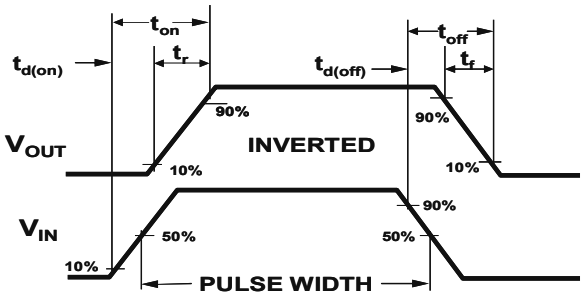


Figure 2: Switching Waveforms

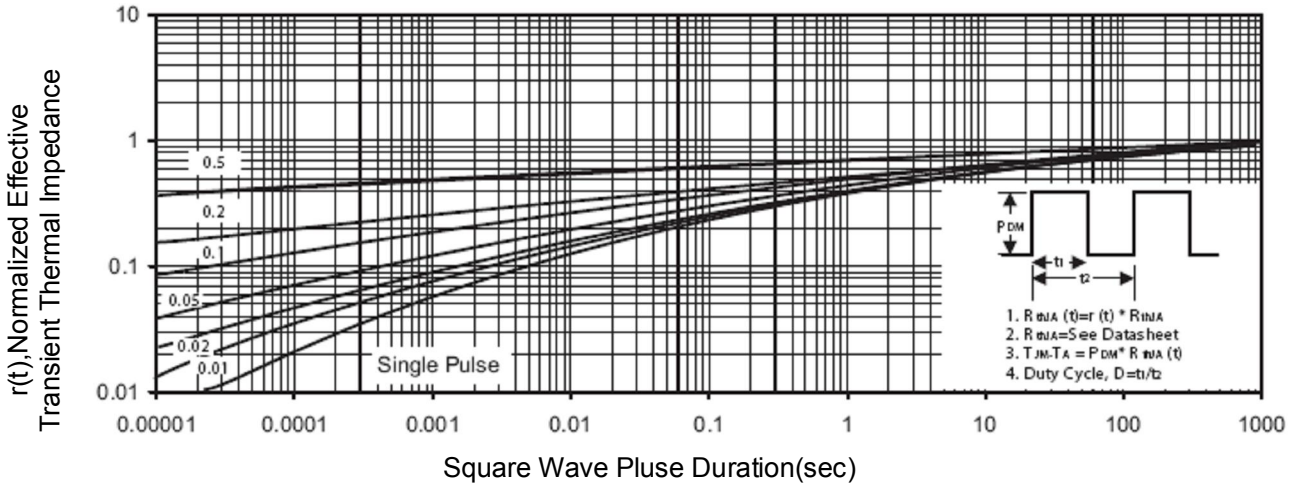
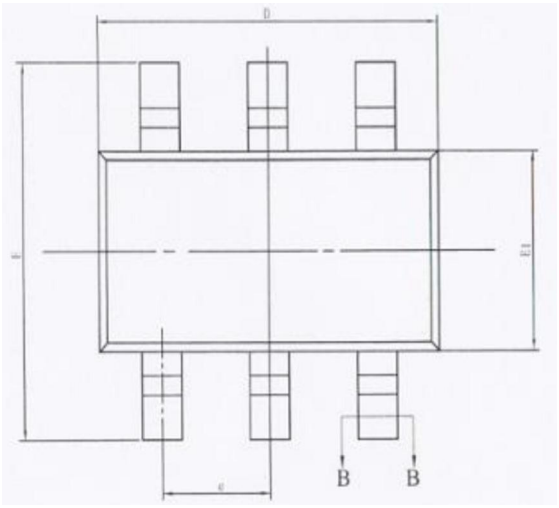
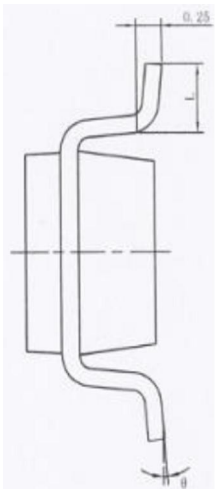


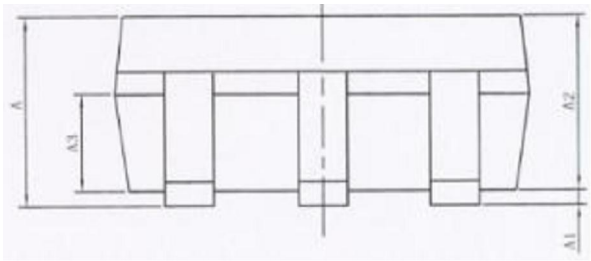
Figure 3 Normalized Maximum Transient Thermal Impedance

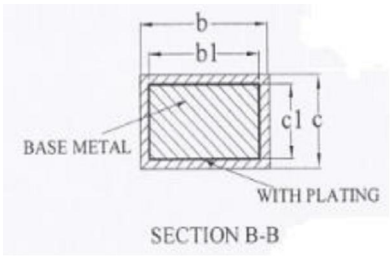
SOT23-6 PACKAGE INFORMATION

Dimensions in Millimeters (UNIT: mm)









Symbol	Dimension In Millimeters		Dimension In Inches	
	Min	Max	Min	Max
A	-	1.350	-	0.053
A1	0.000	0.150	0.000	0.006
A2	1.000	1.200	0.039	0.047
b	0.340	0.430	0.013	0.017
c	0.150	0.210	0.006	0.008
D	2.720	3.120	0.107	0.123
E	1.400	1.800	0.055	0.071
E1	2.600	3.000	0.102	0.118
e	0.95(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0^0	8^0	0^0	8^0

NOTES:

1. All dimensions are in millimeters.
2. Dimensions are inclusive of plating
3. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 6 mils.
4. Dimension L is measured in gauge plane.
5. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.