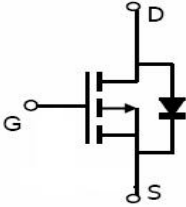
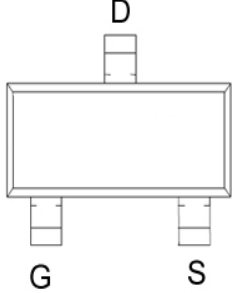
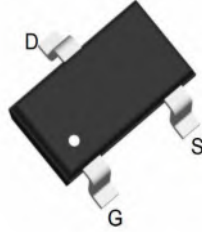


FH3419S

P-Channel Enhancement Mode MOSFET

<p>Description</p> <p>The FH3419S is the P-Channel enhancement mode MOSFET in a plastic package (SOT-23-3L) using the Trench technology.</p> <p>Applications</p> <ul style="list-style-type: none"> ◆ High Speed Switch ◆ DC-DC Converters ◆ Lithium-Ion Battery 	<p>Features</p> <ul style="list-style-type: none"> ◆ $V_{DS} = -30V$; $I_D = -6.5A$ $R_{DS(ON)}(Typ.) = 16\ m\Omega$ @ $V_{GS} = -10V$ $R_{DS(ON)}(Typ.) = 20.5\ m\Omega$ @ $V_{GS} = -4.5V$ $R_{DS(ON)}(Typ.) = 19\ m\Omega$ @ $V_{GS} = -5.0V$ ◆ LogicLevelCompatible ◆ SMDPackage(SOT-23-3L) ◆ TrenchTechnology ◆ FastSwitching 	
 <p>Schematic diagram</p>	 <p>Marking and Pin Assignment</p>	 <p>SOT-23-3L top view</p>

■ Absolute Maximum Ratings ($T_A = 25^\circ C$, unless otherwise specified)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 25	V
Continuous Drain Current ($T_J = 150^\circ C$)	I_D	-6.5	A
Pulsed Drain Current (Note 3)	I_{DM}	-26	A
Power Dissipation	P_D	1.25	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$
Thermal Resistance-Junction to Ambient (Note 1)	R_{thJA}	96	$^\circ C/W$

■ Electrical Characteristics ($T_A = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = -250\mu A$	-30	-35	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.5	-1.9	V
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 25V$	-	-	± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$	-	-	-1	μA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -4.0A$	-	16	19	m Ω
		$V_{GS} = -4.5V, I_D = -4.0A$	-	20.5	26	
		$V_{GS} = -5.0V, I_D = -1.0A$	-	19	25	
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -5.0A$	-	14		S
Diode Forward Voltage (Note 2)	V_{SD}	$V_{GS} = 0V, I_S = -1.0A$	-	-	-1.2	V
Diode Forward Current (Note 1)	I_S		-	-	-3.2	A
Dynamic						
Total Gate Charge	Q_g	$V_{DS} = -15V, V_{GS} = -10V, I_D = -1A$	-	30	-	nC
Gate-Source Charge	Q_{gs}		-	4	-	
Gate-Drain Charge	Q_{gd}		-	3	-	
Input Capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V, f = 1MHz$	-	1380	-	pF
Output Capacitance	C_{oss}		-	207	-	
Reverse Transfer Capacitance	C_{rss}		-	136	-	
Switching						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15V, R_L = 15\Omega, I_D = -1A, V_{GS} = -4.5V, R_{GEN} = 10\Omega$	-	9	-	nS
Rise Time	t_r		-	3.2	-	
Turn-Off Delay Time	$t_{d(off)}$		-	38	-	
Fall-Time	t_f		-	11	-	

- Note:**
1. Mounted on FR4 board, $t \leq 5\text{sec}$.
 2. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.
 3. Repetitive Rating: Pulse width limited by maximum junction temperature.

■ Typical Electrical and Thermal Characteristics

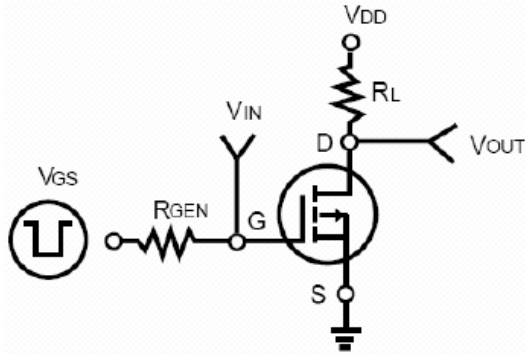


Figure 1: Switching Test Circuit

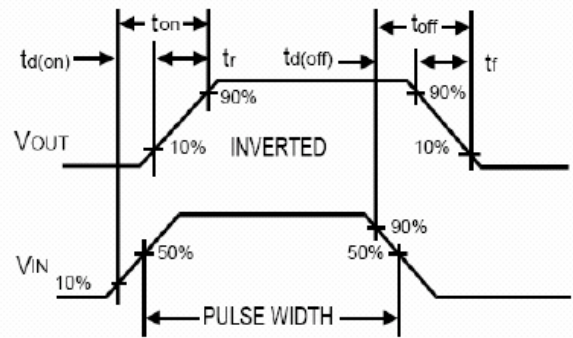


Figure 2: Switching Waveforms

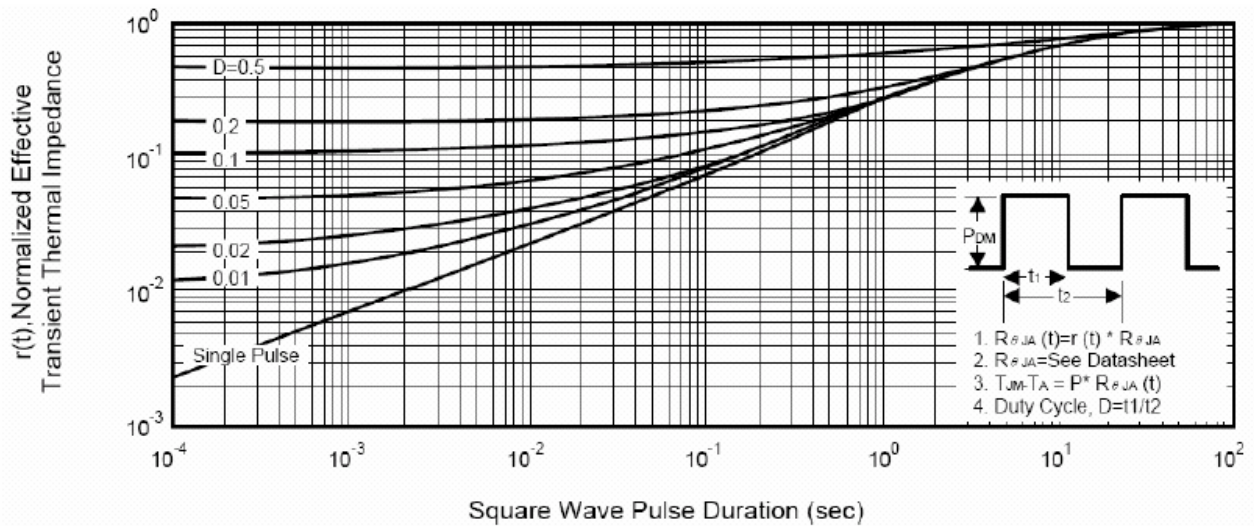
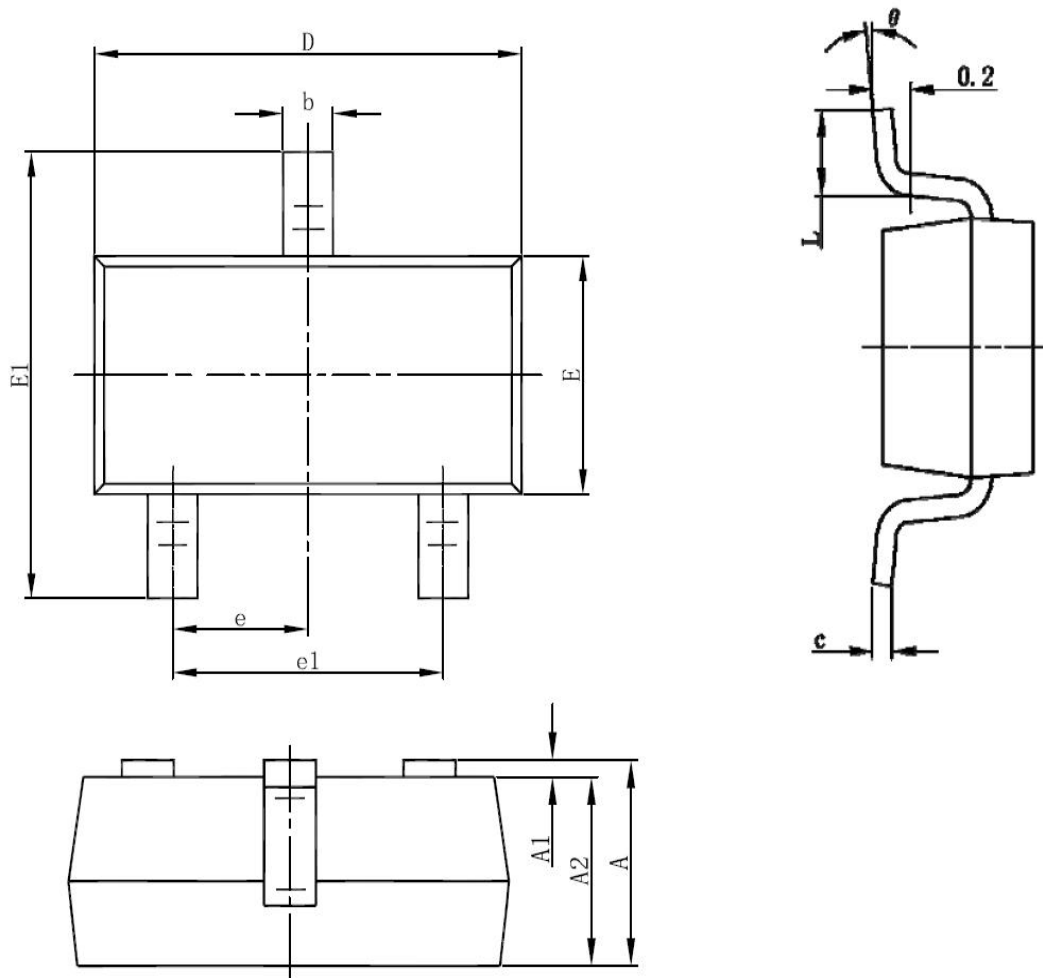


Figure 3: Normalized Maximum Transient Thermal Impedance

■ Package Dimensions : SOT-23-3L



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°