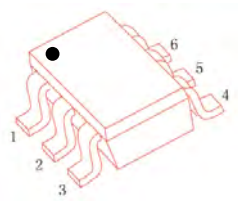
P-Channel Enhancement Mode Field Effect Transistor

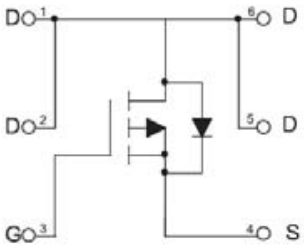
General Description

The FTK3407L uses advanced trench technology to provide excellent $R_{DS(on)}$ with low gate charge. This device is suitable for use as a load switch or in PWM applications.

SOT-23-6L



MARKING: R7



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-4.1	A
Power Dissipation	P_D	1.8 (Note 1a) 0.8 (Note 1b)	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	78 (Note 1a)	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55~+150	℃

Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static characteristics						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-24V,V_{GS} = 0V			-1	μA
Gate-source leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Drain-source on-resistance (note 2)	$R_{DS(on)}$	V_{GS} =-10V, I_D =-4.1A			60	mΩ
		V_{GS} =-4.5V, I_D =-3A			87	mΩ
Forward tranconductance (note 2)	g_{fS}	V_{DS} =-5V, I_D =-4A	5.5			S
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1		-3	V
Diode forward voltage (note 1)	V_{SD}	I_S=-1A,V_{GS}=0V			-1	V
Dynamic characteristics (note 3)						
Input capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V,f =1MHz		700		pF
Output capacitance	C_{oss}			120		pF
Reverse transfer capacitance	C_{rss}			75		pF
Switching Characteristics (note 3)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=-10V,V_{DS}=-15V, R_L=3.6Ω,R_{GEN}=3Ω		8.6		ns
Turn-on rise time	t_r			5.0		ns
Turn-off delay time	$t_{d(off)}$			28.2		ns
Turn-off fall time	t_f			13.5		ns

Notes:

1: R_{JA} 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_{JC} is guaranteed by design while R_{CA} is determined by the user's board design.

a) 78℃/W when mounted on a 1 in^2 pad of 2 oz copper

b) 156℃/W whe mounted on a minimum pad of 2 oz copper

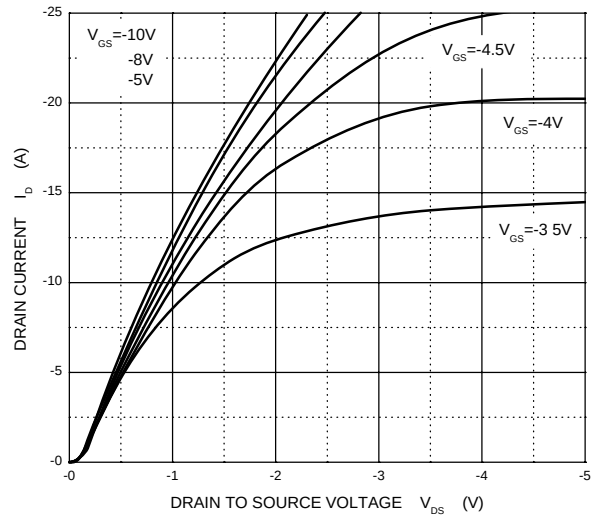
Scale 1: 1 on letter size paper

2. Pulse test: Pulse width ≤300μs, duty cycle ≤2%.

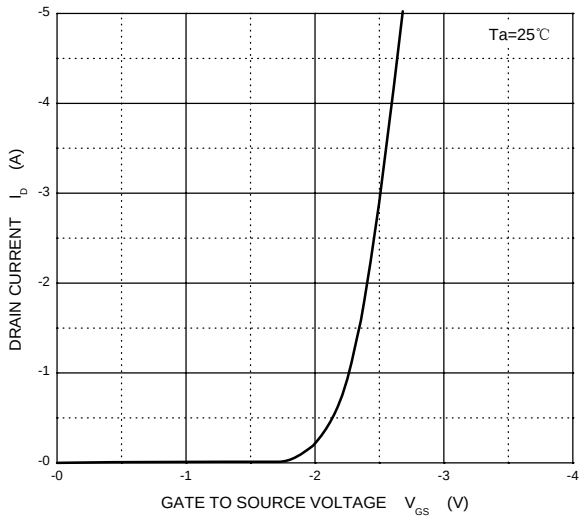
3. These parameters have no way to verify.

Typical Characteristics

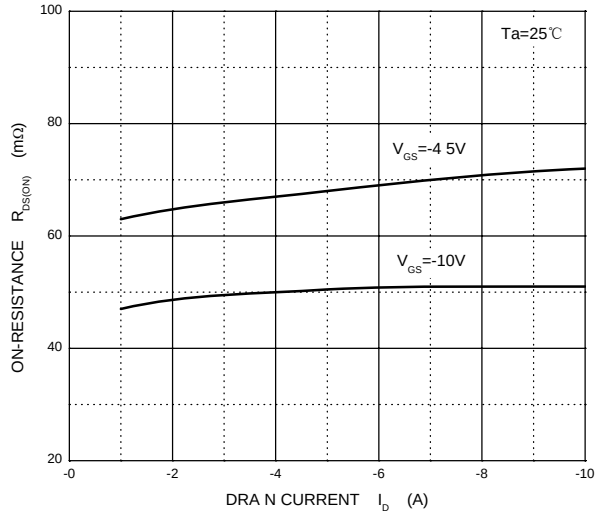
Output Characteristics



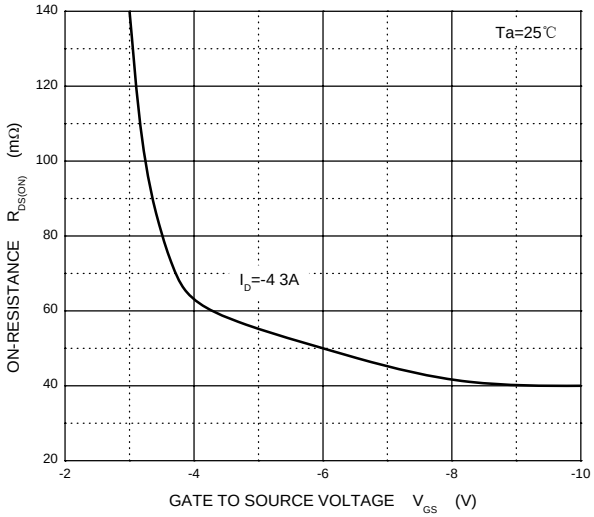
Transfer Characteristics



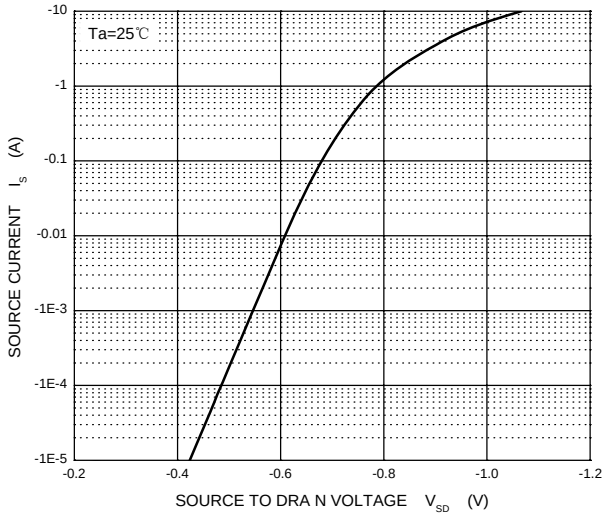
$R_{DS(ON)}$ —— I_D



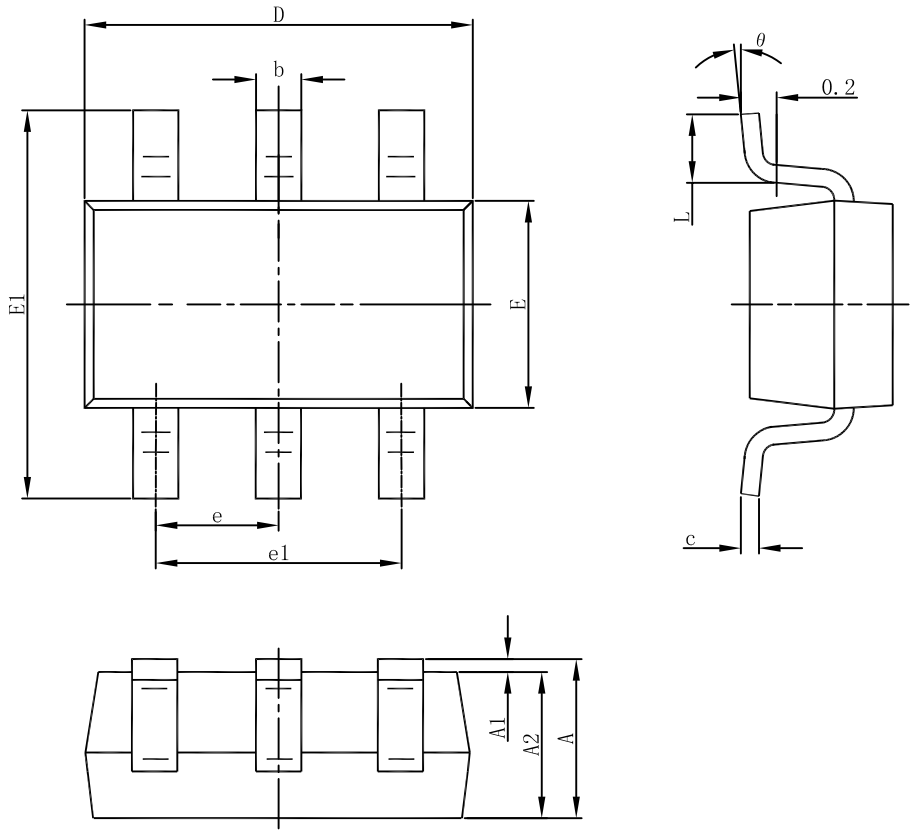
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



SOT-23-6L 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°

SOT-23-3L