-30V/-4.1A P-Channel Enhancement Mode MOSFET

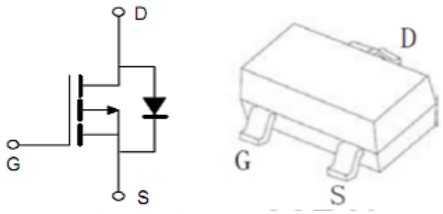
Features

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance

BVDSS	-30	V
ID	-4.1	A
RDSON@VGS=-10V	40	mΩ
RDSON@VGS=-4.5V	53	mΩ

Applications

- Low Side Load Switch
- Battery Switch
- Optimized for Power Management Applications for Portable Products, such as Aeromodelling, Power bank, Brushless motor, Main board , and Others



SOT-23-3L

Order Information

Product	Package	Marking	Reel Size	Reel	Carton
PT3407	SOT-23-3L	A7sHB	7inch	3000PCS	180000PCS

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage		-30	V
V_{GS}	Gate-Source Voltage		±20	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	°C
I_S	Diode Continuous Forward Current	TA =25°C	-2.6	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested (Sillicon Limit) (Note1)	TA =25°C	-20	A
I_D	Continuous Drain current	TA =25°C	-4.1	A
P_D	Maximum Power Dissipation	TA =25°C	1.4	W
$R_{\theta JA}$	Thermal Resistance Junction−to−Ambient (Note2)		89.2	°C/W

-30V/-4.1A P-Channel Enhancement Mode MOSFET

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
$V_{(BR)DSS}$	Drain- Source Breakdown Voltage	VGS=0V ID=-250μA	-30	--	--	V
I_{DSS}	Zero Gate Voltage Drain current	VDS=-24V,VGS=0V	--	--	-1	μA
I_{GSS}	Gate-Body Leakage Current	VGS=±20V,VDS=0V	--	--	±100	nA
$V_{GS(TH)}$	Gate Threshold Voltage	VDS=VGS,ID=-250μA	-1	-1.5	-3	V
$R_{DS(ON)}$	Drain-Source On-State Resistance (Note3)	VGS=-10V, ID=-4.1A	--	40	55	mΩ
		VGS=-4.5V, ID=-3A	--	53	70	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated) (Note4)						
C_{iss}	Input Capacitance	VDS= -15V, VGS=0V, F=1MHz	--	551.5	--	pF
C_{oss}	Output Capacitance		--	90.9	--	pF
C_{rss}	Reverse Transfer Capacitance		--	60.7	--	pF
Q_g	Total Gate Charge	VDS= -15V, ID= -4.1A, VGS= -10V	--	9.35	--	nC
Q_{gs}	Gate-Source Charge		--	3.43	--	nC
Q_{gd}	Gate-Drain Charge		--	1.7	--	nC
Switching Characteristics (Note4)						
$t_{d(on)}$	Turn-on Delay Time	VDD=-15V, ID=-1A, RG=15Ω, VGS=-10V	--	10.8	--	nS
t_r	Turn-on Rise Time		--	2.33	--	nS
$t_{d(off)}$	Turn-off Delay Time		--	22.53	--	nS
t_f	Turn-off Fall Time		--	3.87	--	nS
Source- Drain Diode Characteristics@ TJ = 25°C (unless otherwise stated)						
V_{SD}	Forward on voltage (Note3)	IS=-2.6A,VGS=0V	--	--	-1.3	V

Note:

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

-30V/-4.1A P-Channel Enhancement Mode MOSFET

Typical Characteristics

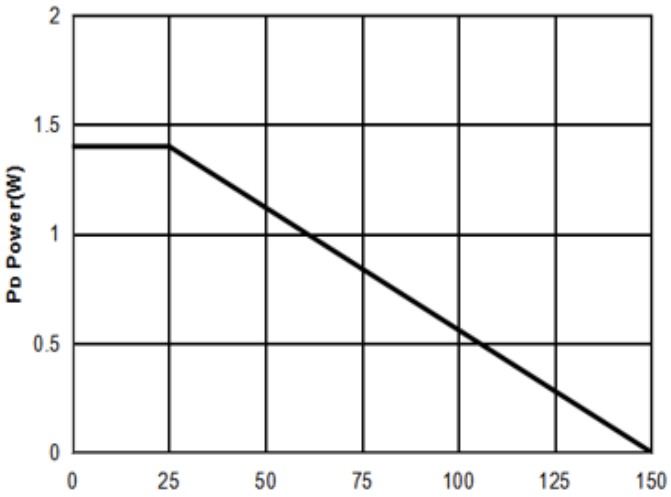


Figure1：T_J Junction Temperature（°C）

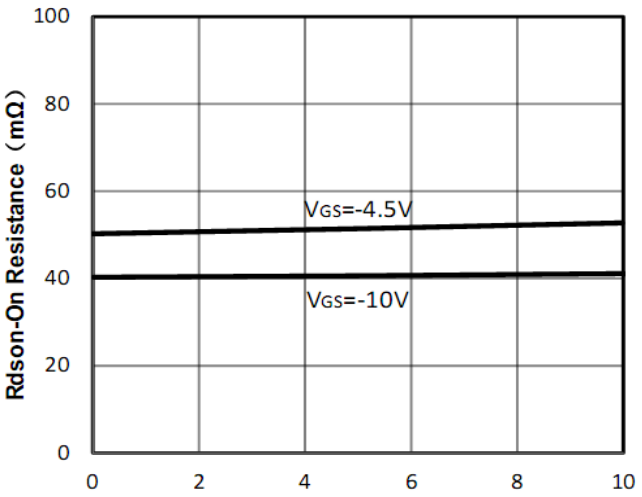


Figure2：$-I_D$ Drain Current（A）

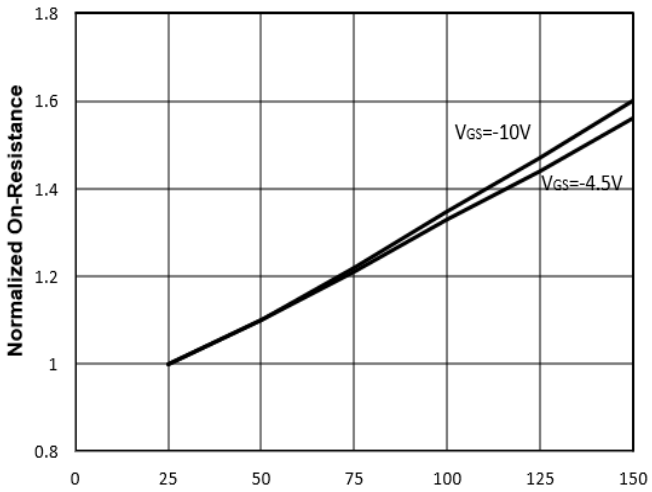


Figure3：T_J Junction Temperature（°C）

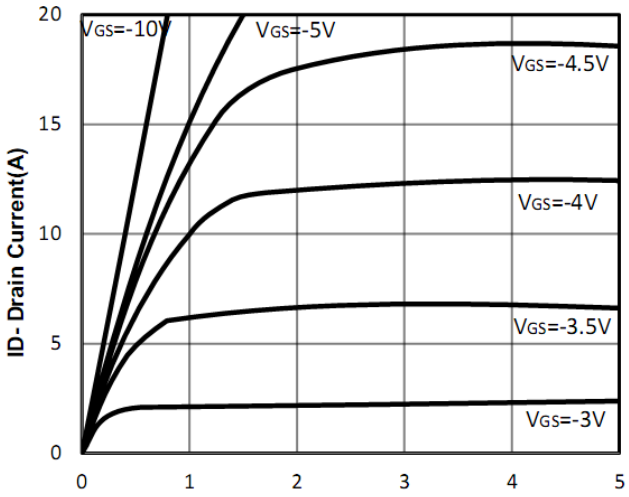


Figure4：$-V_{DS}$ Drain-Source Voltage（V）

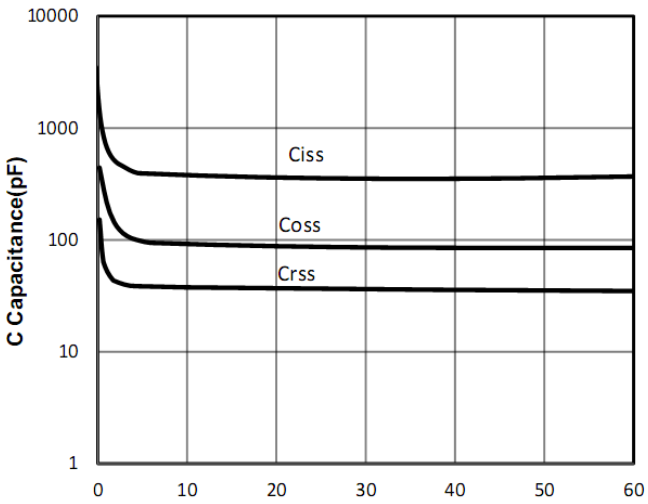


Figure5：$-V_{DS}$ Draun-Source Voltage（V）

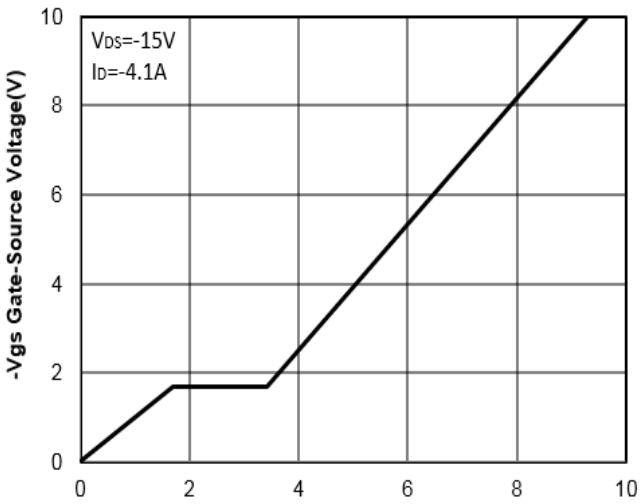


Figure6：Qg Gate Charge（nC）

-30V/-4.1A P-Channel Enhancement Mode MOSFET

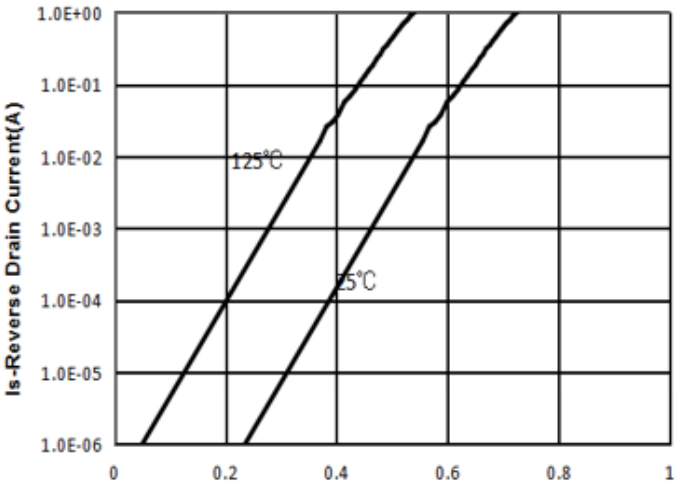


Figure7：-Vsd Source-Drain Voltage（V）

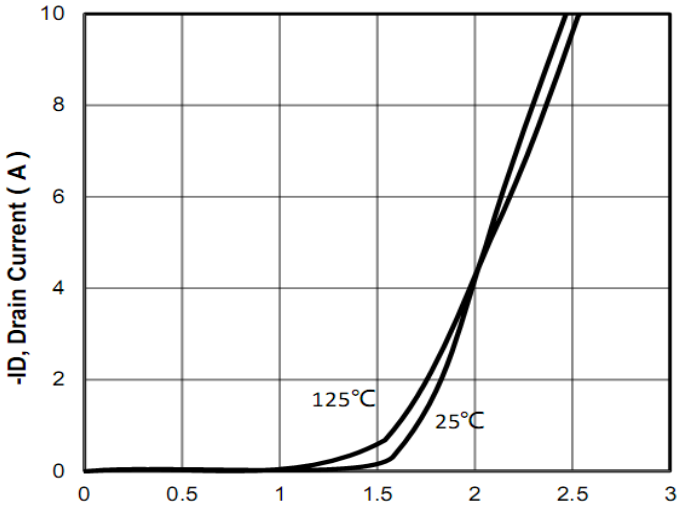


Figure8：-Vgs Gate-Source Voltage（V）

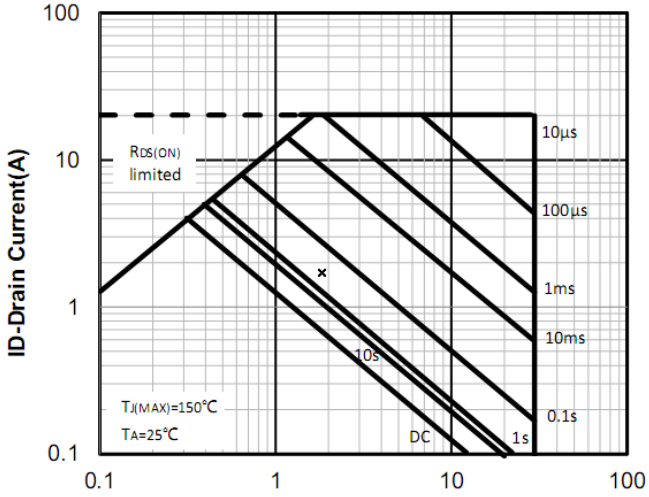


Figure9：-Vds Drain -Source Voltage（V）

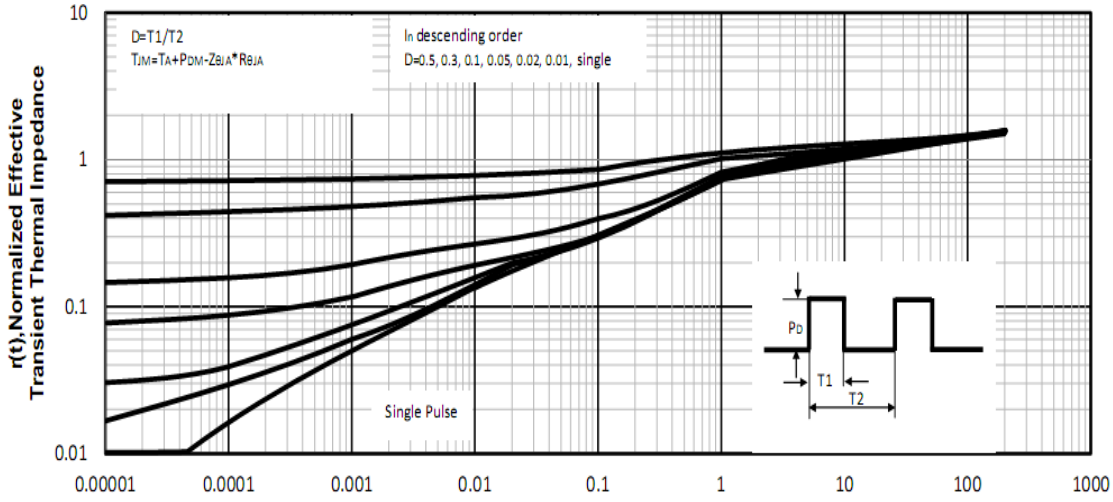


Figure10：Square Wave Pulse Duration（sec）

Test Circuit and Waveform:

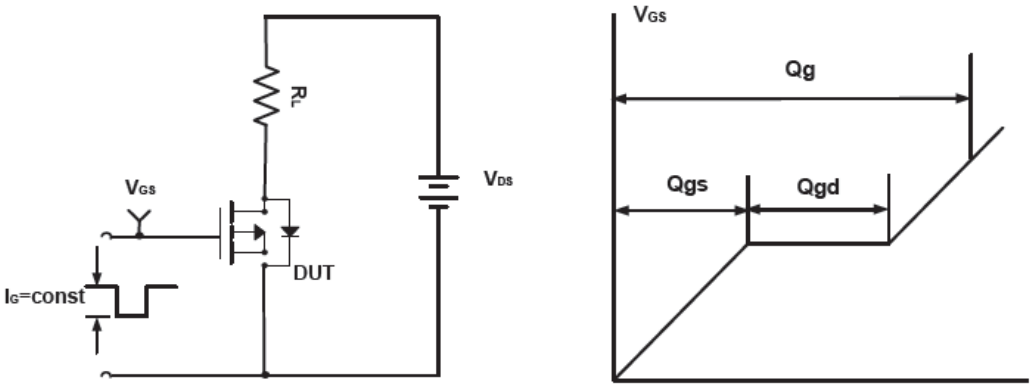


Figure A Gate Charge Test Circuit &Waveforms

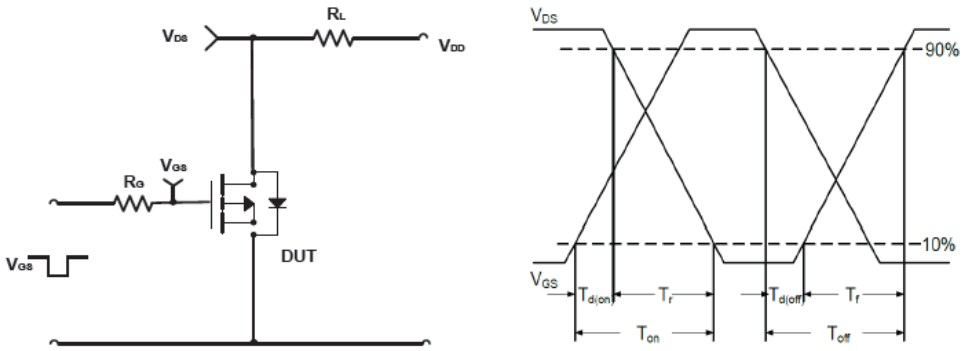


Figure B Switching Test Circuit & Waveforms

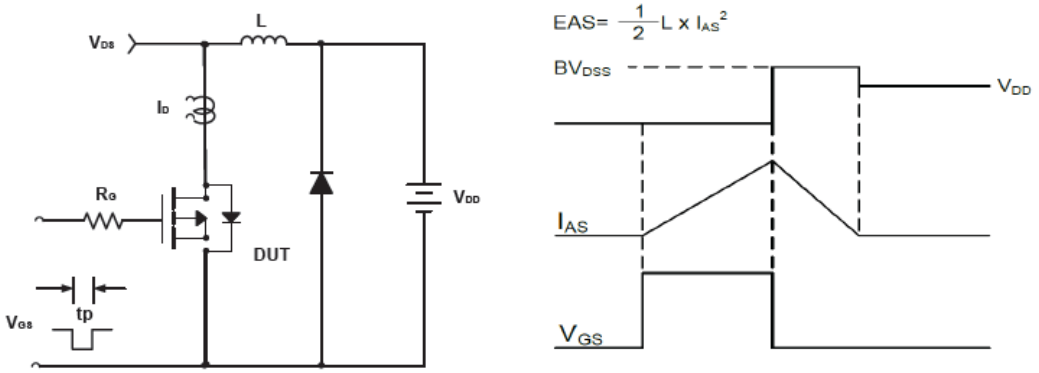
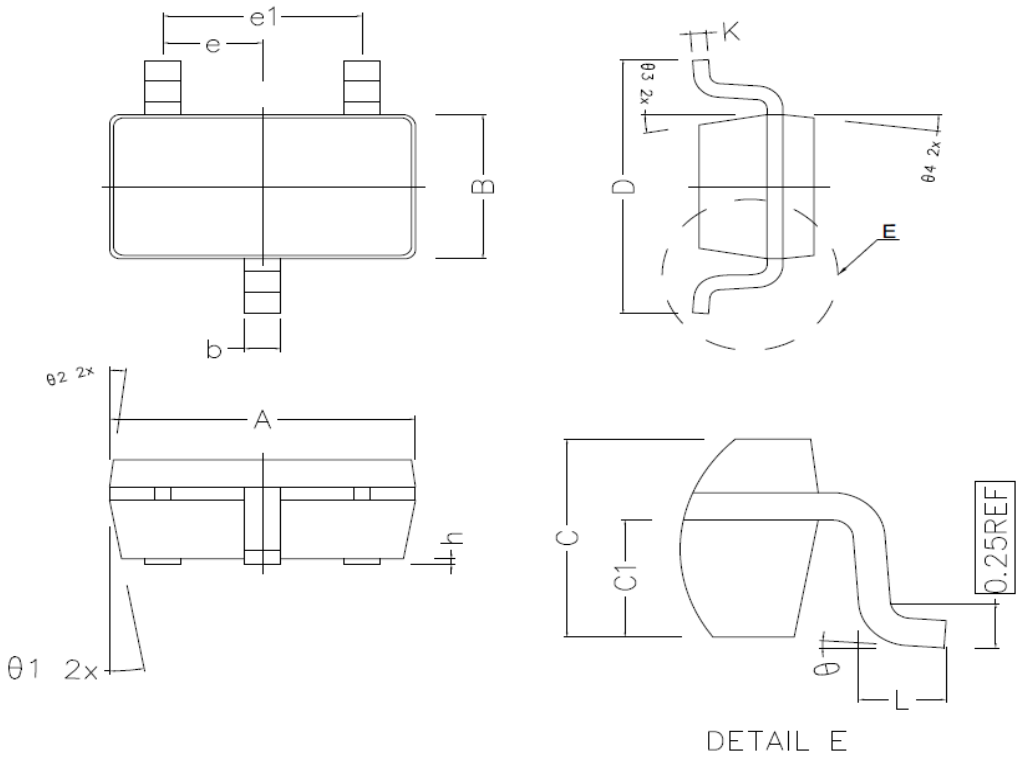


Figure C Unclamped Inductive Switching Circuit & Waveforms

-30V/-4.1A P-Channel Enhancement Mode MOSFET

SOT-23-3 Package Outline Dimensions (Units: mm)



COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	2.820	2.920	3.020
B	1.500	1.600	1.700
C	1.050	1.100	1.150
C1	0.600	0.650	0.700
D	2.650	2.800	2.950
L	0.300	0.450	0.600
b	0.280	0.350	0.420
h	0.020	0.050	0.100
K	0.120	—	0.230
e	0.950TYPE		
e1	1.900TYPE		
θ_1	10° TYPE		
θ_2	7° TYPE		
θ_3	10° TYPE		
θ_4	7° TYPE		
θ	0° ~ 8°		