

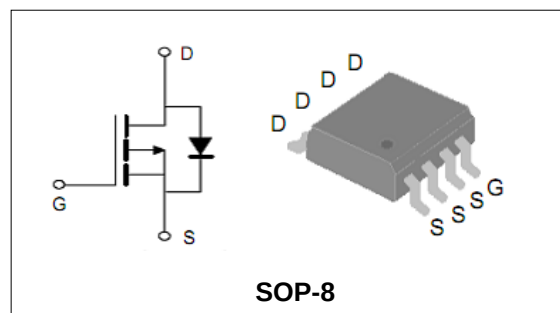
**-30V/-10.5A P-Channel Advanced Power MOSFET****Features**

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

BVDSS	-30	V
ID	-10.5	A
RDSON@VGS=-10V	11	mΩ
RDSON@VGS=-4.5V	16	mΩ

Applications

- PWM applications
- Load switch
- Power management

**Order Information**

Product	Package	Marking	Reel Size	Reel	Carton
PT4435	SOP-8	PT4435	13inch	3000PCS	48000PCS

Absolute Maximum Ratings

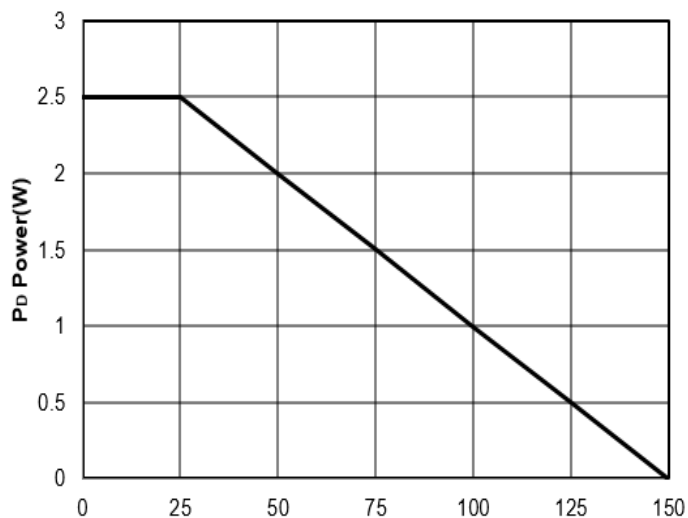
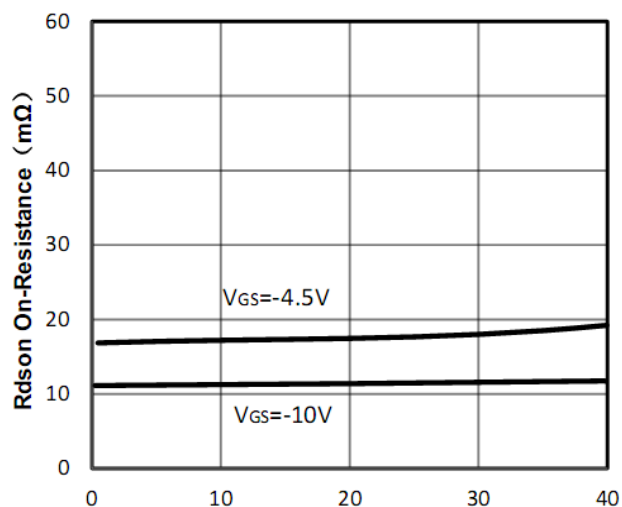
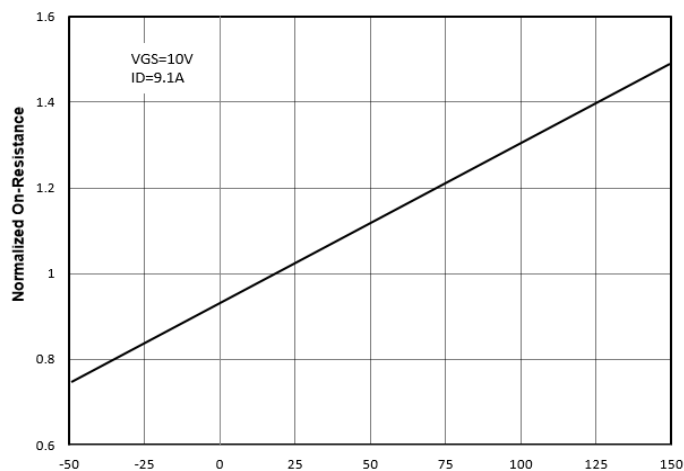
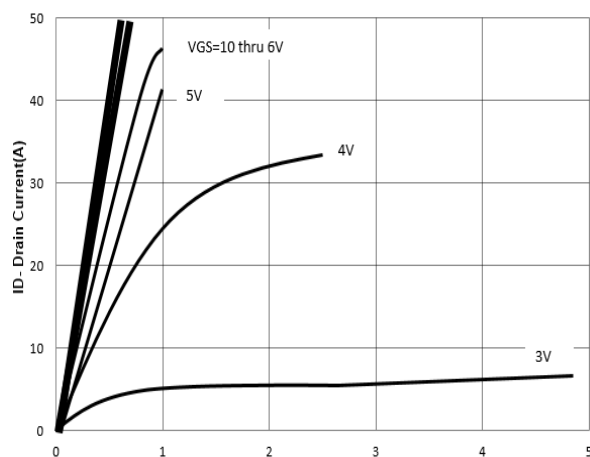
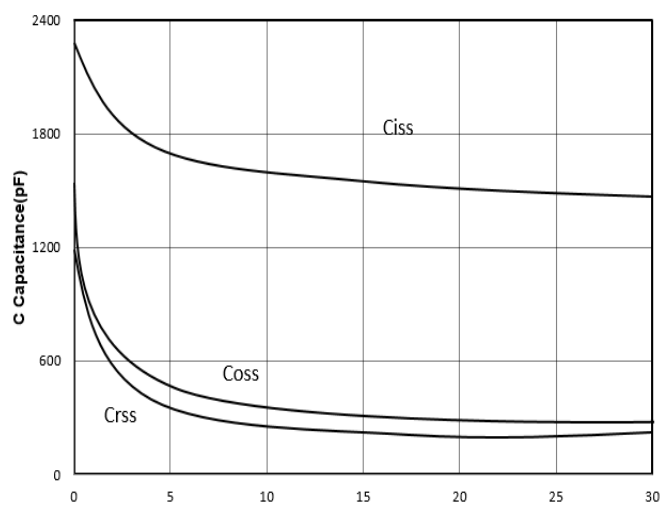
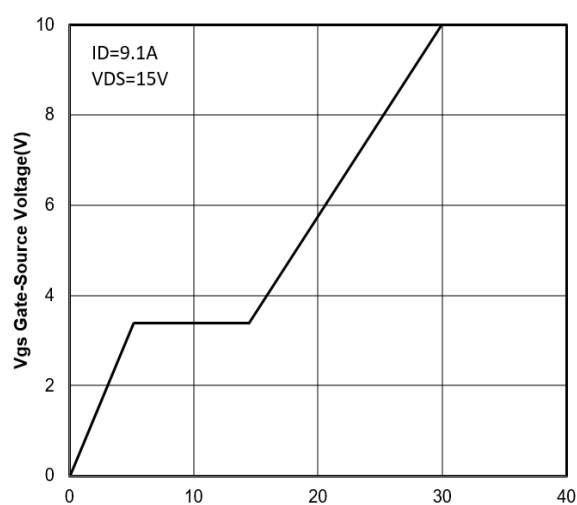
Symbol	Parameter		Rating	Unit	
Common Ratings (TC=25°C Unless Otherwise Noted)					
V _{(BR)DSS}	Drain-Source Breakdown Voltage		-30	V	
V _{GS}	Gate-Source Voltage		±20	V	
T _J	Maximum Junction Temperature		150	°C	
T _{STG}	Storage Temperature Range		-55 to 150	°C	
I _S	Diode Continuous Forward Current	TA =25°C	-10.5	A	
Mounted on Large Heat Sink					
I _{DM}	Pulse Drain Current Tested (Silicon Limit)	(Note1)	TA =25°C	-50	A
I _D	Continuous Drain current		TA =25°C	-10.5	A
P _D	Maximum Power Dissipation		TA =25°C	2.5	W
R _{θJA}	Thermal Resistance Junction-to-Ambient		(Note2)	50	°C/W

**-30V/-10.5A P-Channel Advanced Power 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	-1.4	-3	V
R _{DS(ON)}	Drain-Source On-State Resistance (Note3)	VGS=-10V, ID=-10.5A	--	11	20	mΩ
		VGS=-4.5V, ID=-6A	--	16	30	mΩ
g _{FS}	Forward Transconductance	VDS=-10V,ID=-5A	--	21	--	S
Dynamic Electrical Characteristics @ Tj = 25°C (unless otherwise stated) (Note4)						
C _{iss}	Input Capacitance	VDS= -8V, VGS=0V, F=1MHz	--	1740	--	pF
C _{oss}	Output Capacitance		--	235	--	pF
C _{rss}	Reverse Transfer Capacitance		--	225	--	pF
Q _g	Total Gate Charge	VDS= -15V, ID= -9.1A, VGS= -10V	--	37.2	--	nC
Q _{gs}	Gate-Source Charge		--	9.84	--	nC
Q _{gd}	Gate-Drain Charge		--	7.52	--	nC
Switching Characteristics (Note4)						
t _{d(on)}	Turn-on Delay Time	VDD = -15V, RL=15Ω ID = -1A, VGEN = -10V RG = 6Ω	--	10	--	nS
t _r	Turn-on Rise Time		--	15	--	nS
t _{d(off)}	Turn-off Delay Time		--	110	--	nS
t _f	Turn-off Fall Time		--	70	--	nS
Source- Drain Diode Characteristics@ TJ = 25°C (unless otherwise stated)						
V _{SD}	Forward on voltage (Note3)	IS=-2.1A,VGS=0V	--	--	-1.2	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/-10.5A P-Channel Advanced Power 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} Drain-Source Voltage (V)****Figure6: Q_g Gate Charge (nC)**

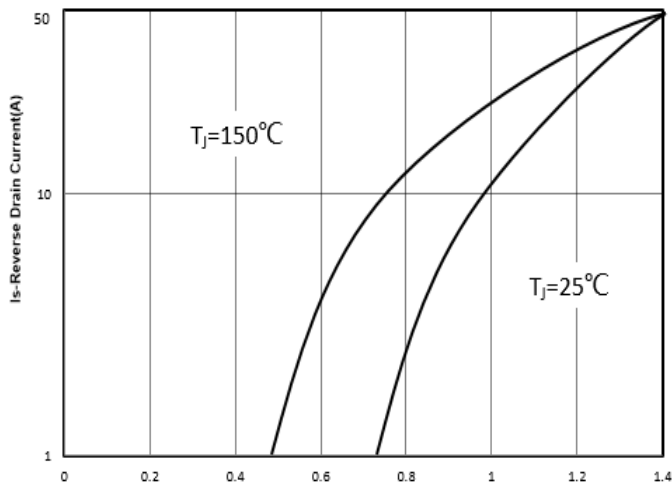
**-30V/-10.5A P-Channel Advanced Power MOSFET**

Figure7: Vds Source-Drain Voltage (V)

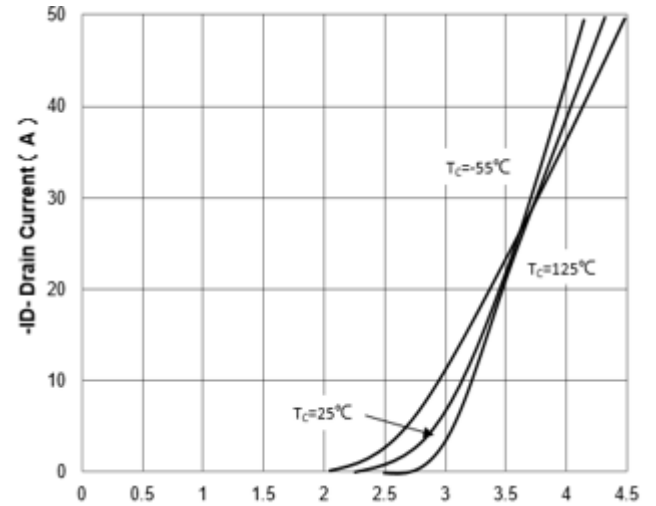


Figure8: -Vgs Gate-Source Voltage (V)

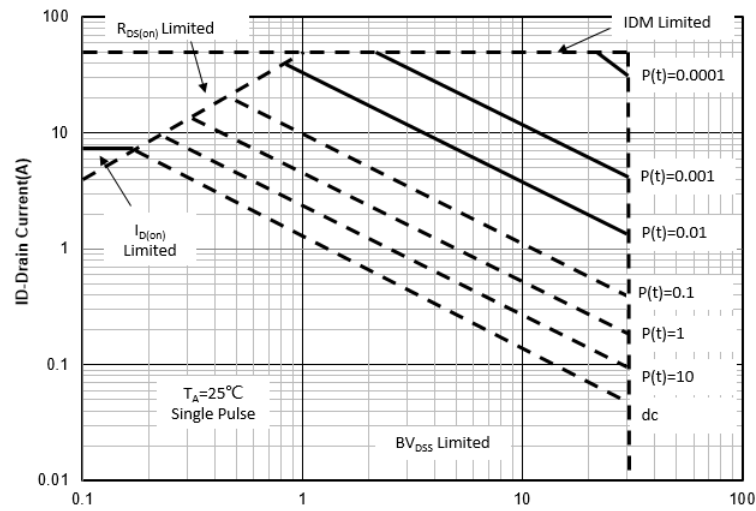


Figure9: -Vds Drain -Source Voltage (V)

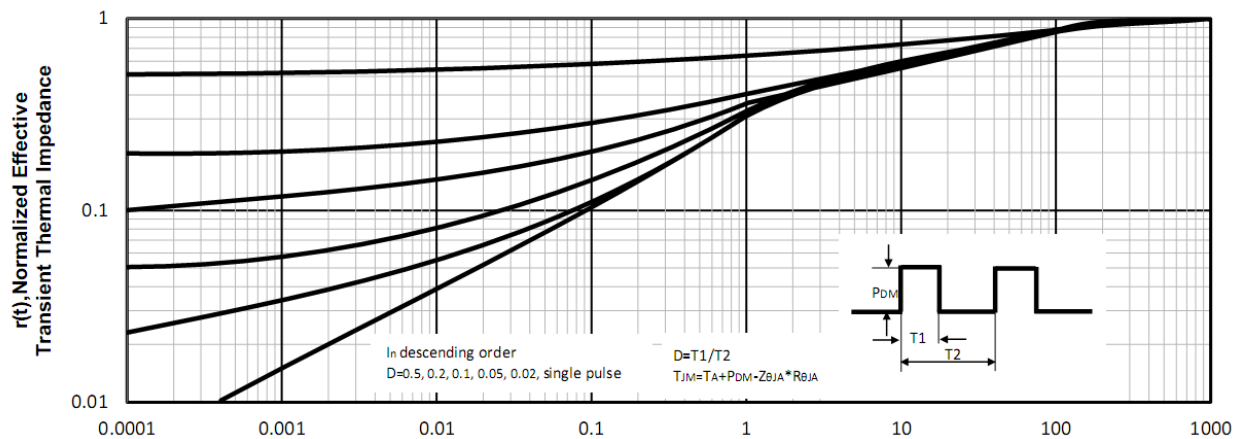


Figure10: Square Wave Pulse Duration (sec)



-30V/-10.5A P-Channel Advanced Power MOSFET
Test Circuit and Waveform:

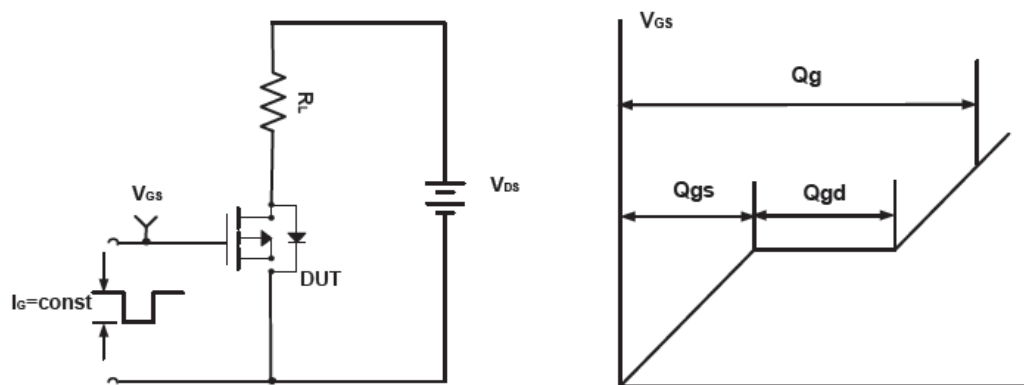


Figure A Gate Charge Test Circuit & Waveforms

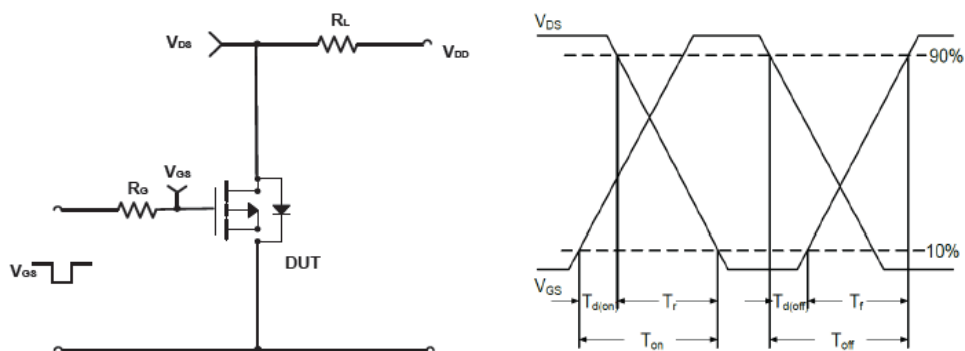


Figure B Switching Test Circuit & Waveforms

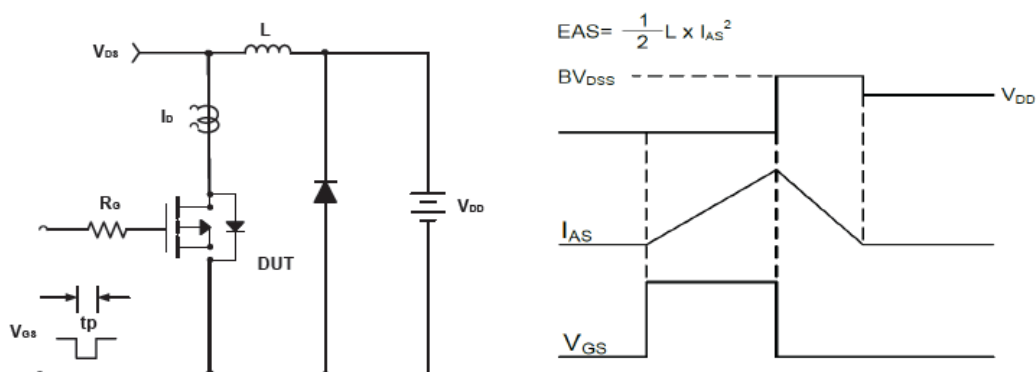
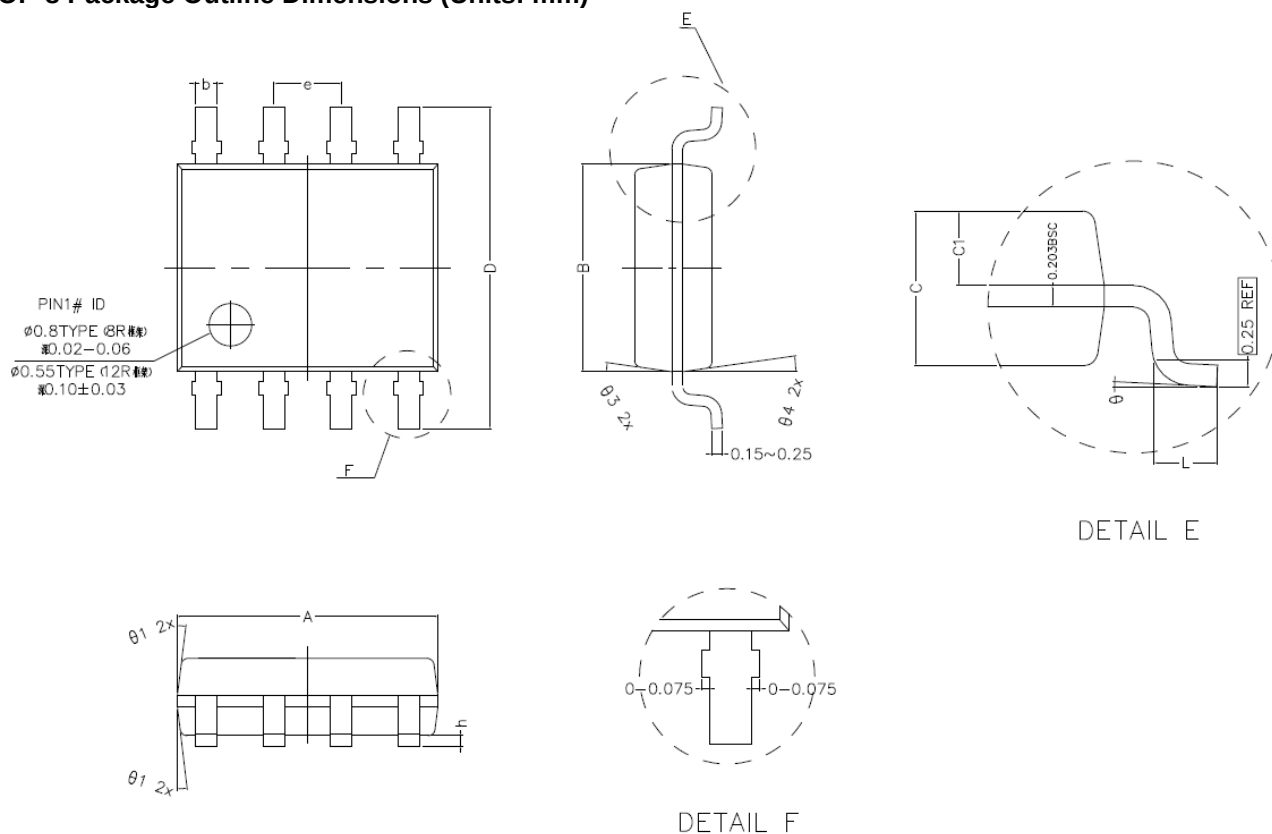


Figure C Unclamped Inductive Switching Circuit & Waveforms

**-30V/-10.5A P-Channel Advanced Power MOSFET****SOP-8 Package Outline Dimensions (Units: mm)**

COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	4.800	4.900	5.000
B	3.800	3.900	4.000
C	1.350	1.450	1.550
C1	0.650	0.700	0.750
D	5.900	6.100	6.300
L	0.500	0.600	0.700
b	0.350	0.400	0.450
h	0.050	0.150	0.250
e	1.270TYPE		
θ ₁	7° TYPE(8R) 12° TYPE(12R)		
θ ₂	7° TYPE(8R) 10° TYPE(12R)		
θ ₃	8° TYPE(8R) 12° TYPE(12R)		
θ ₄	8° TYPE(8R) 10° TYPE(12R)		
θ	0° ~ 8°		