



-30V/-16A P-Channel Advanced Power MOSFET

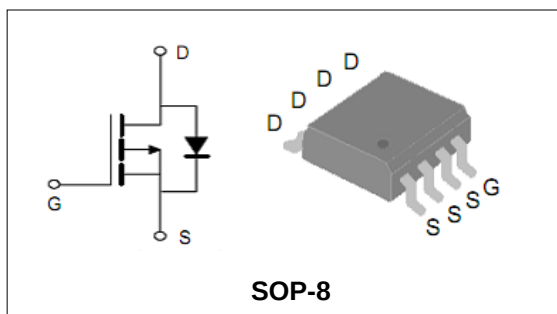
Features

- Improved dv/dt Capability, High Ruggedness.
- Maximum Junction Temperature Range (150°C)

BVDSS	-30	V
ID	-16	A
RDSON@VGS=-10V	6.5	mΩ
RDSON@VGS=-4.5V	8.3	mΩ

Applications

- DC Fan
- Brushless motor
- Optimized for Power Management Applications for Portable Products, such as H-bridge, Inverters Car Charger and Others



Order Information

Product	Package	Marking	Reel Size	Reel	Carton
PTS30P16	SOP-8	PTS30P16	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	-16	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested (Sillicon Limit)	(Note1) TA =25°C	-64	A
I _D	Continuous Drain current	TA =25°C	-16	A
P _D	Maximum Power Dissipation	TA =25°C	3	W
R _{θJA}	Thermal Resistance Junction-to-Ambient		(Note2) 41.7	°C/W

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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=-30V,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	--	-2.1	V
R _{DS(ON)}	Drain-Source On-State Resistance (Note3)	VGS=-10V, ID=-12A	--	6.5	7.7	mΩ
		VGS=-4.5V, ID=-8A	--	8.3	11	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated) (Note4)						
C _{iss}	Input Capacitance	VDS= -15V, VGS=0V, F=1MHz	--	3884	--	pF
C _{oss}	Output Capacitance		--	512	--	pF
C _{rss}	Reverse Transfer Capacitance		--	20	--	pF
Q _g	Total Gate Charge	VDS= -15V, ID= -10A, VGS= -10V	--	64	--	nC
Q _{gs}	Gate-Source Charge		--	16	--	nC
Q _{gd}	Gate-Drain Charge		--	19	--	nC
Switching Characteristics (Note4)						
t _{d(on)}	Turn-on Delay Time	VDD=-15V, ID=-10A, RG=3Ω, VGS=-10V	--	20	--	nS
t _r	Turn-on Rise Time		--	15	--	nS
t _{d(off)}	Turn-off Delay Time		--	59	--	nS
t _f	Turn-off Fall Time		--	28	--	nS
Source- Drain Diode Characteristics@ TJ = 25°C (unless otherwise stated)						
V _{SD}	Forward on voltage	IS=-12A,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.



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Typical Characteristics

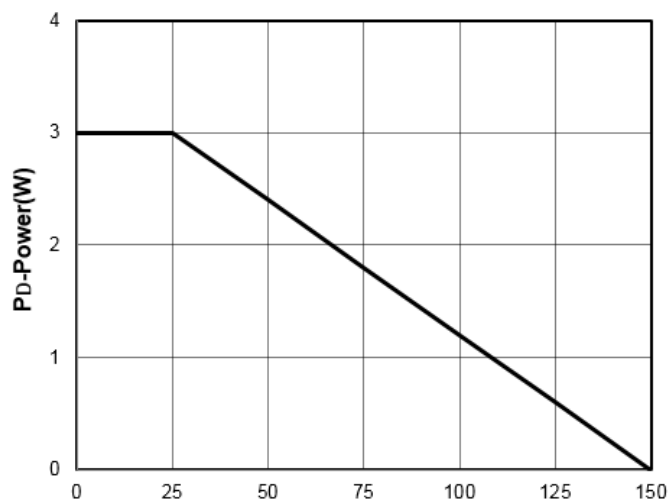


Figure1: T_j Junction Temperature (°C)

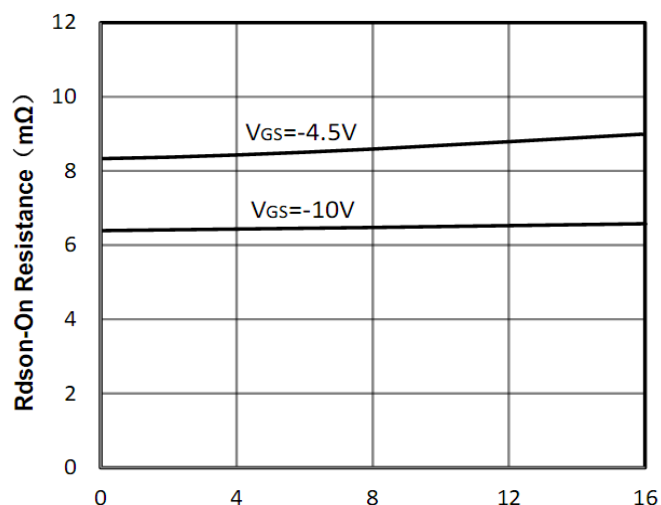


Figure2: -I_d Drain Current (A)

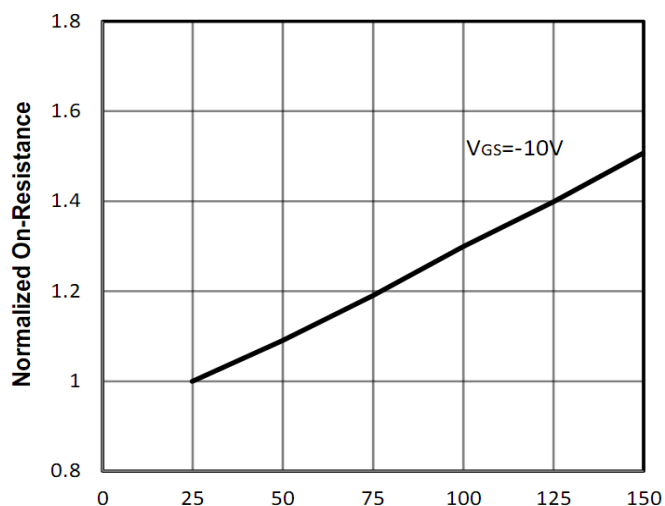


Figure3: T_j Junction Temperature (°C)

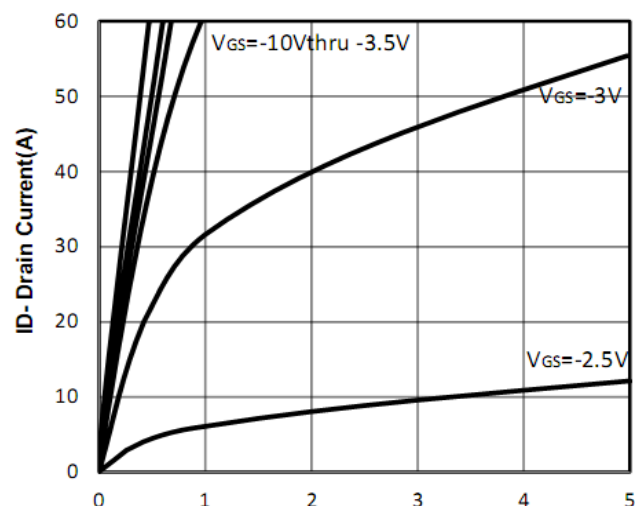


Figure4: -V_{DS} Drain Source Voltage (V)

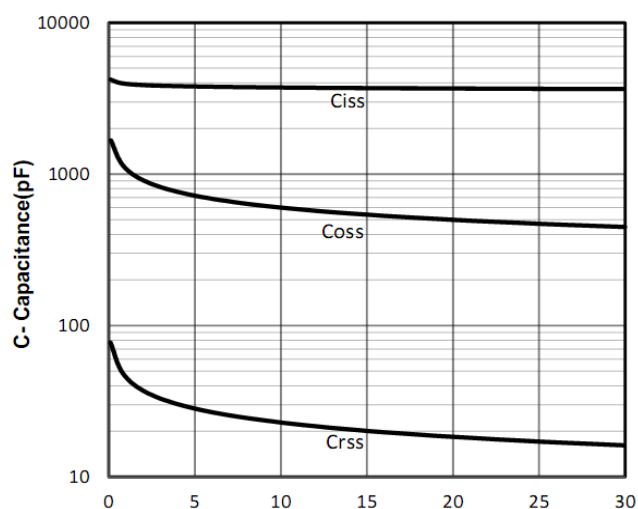


Figure5: -V_{DS} Drain-Source Voltage (V)

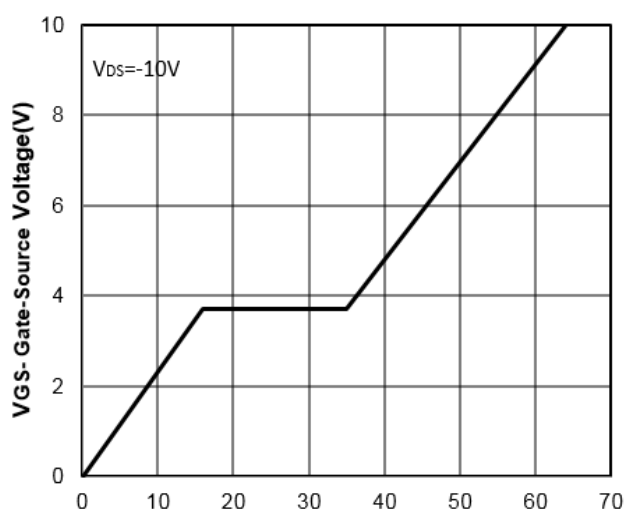


Figure6: Q_g Gate Charge (nC)



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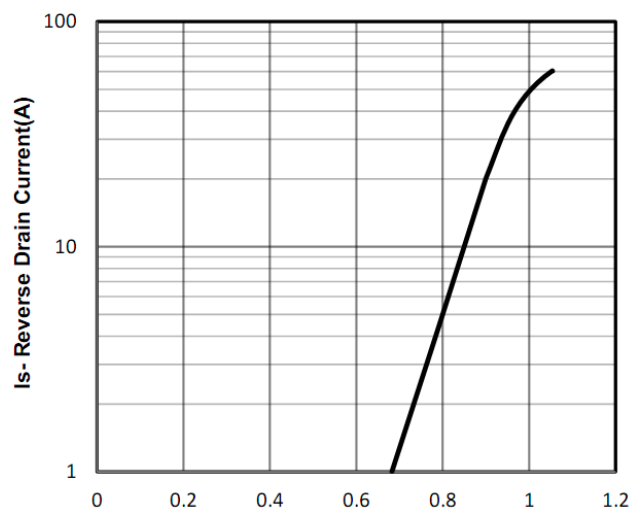


Figure7: -Vsd Source-Drain Voltage (V)

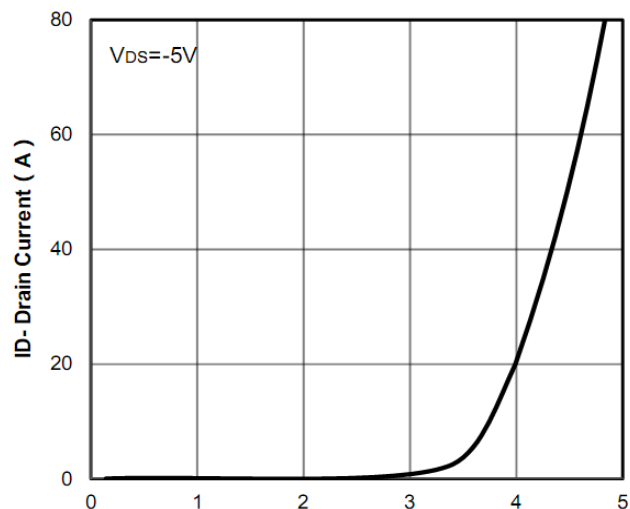


Figure8: -Vgs Gate-Source Voltage (V)

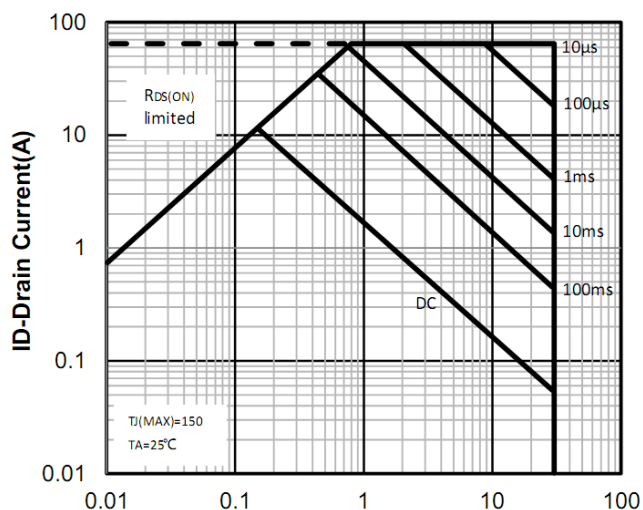


Figure9: -Vds Drain Source Voltage (V)

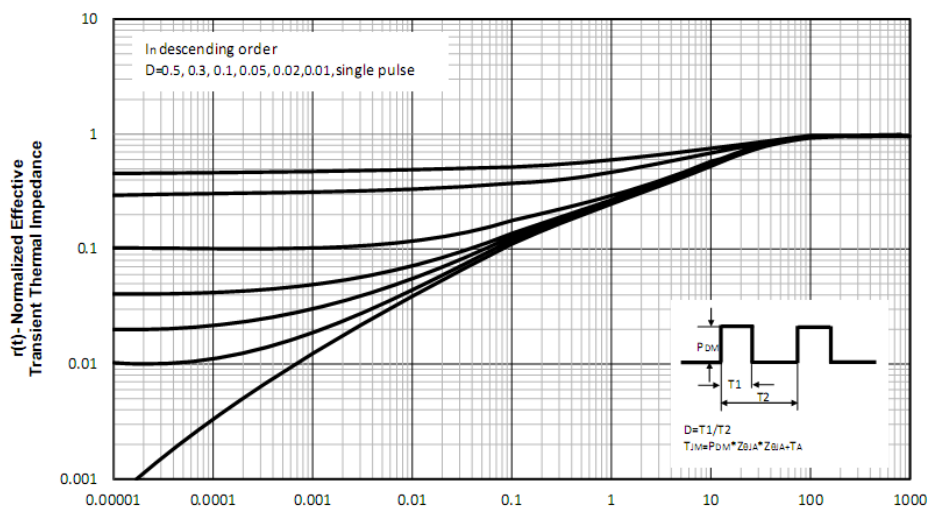
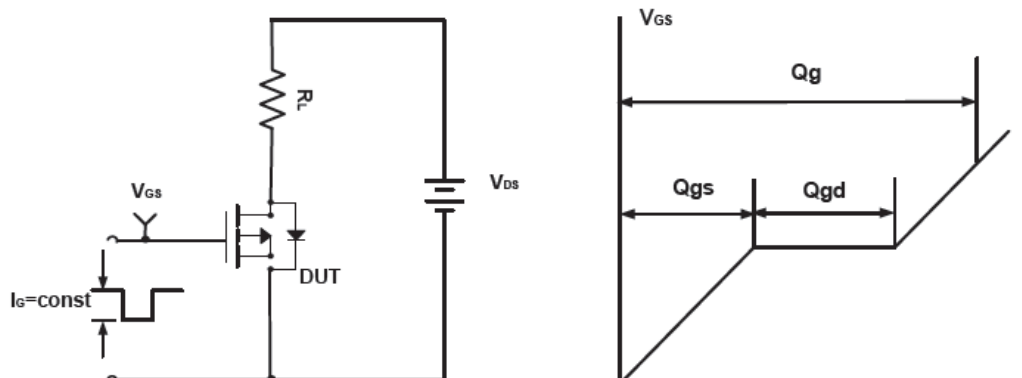
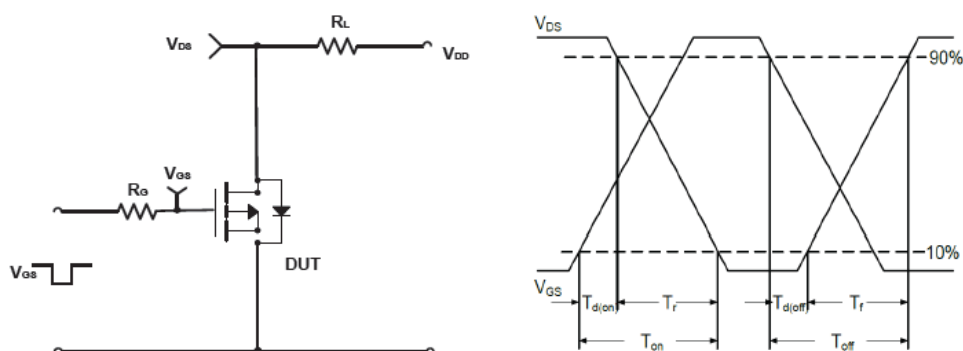
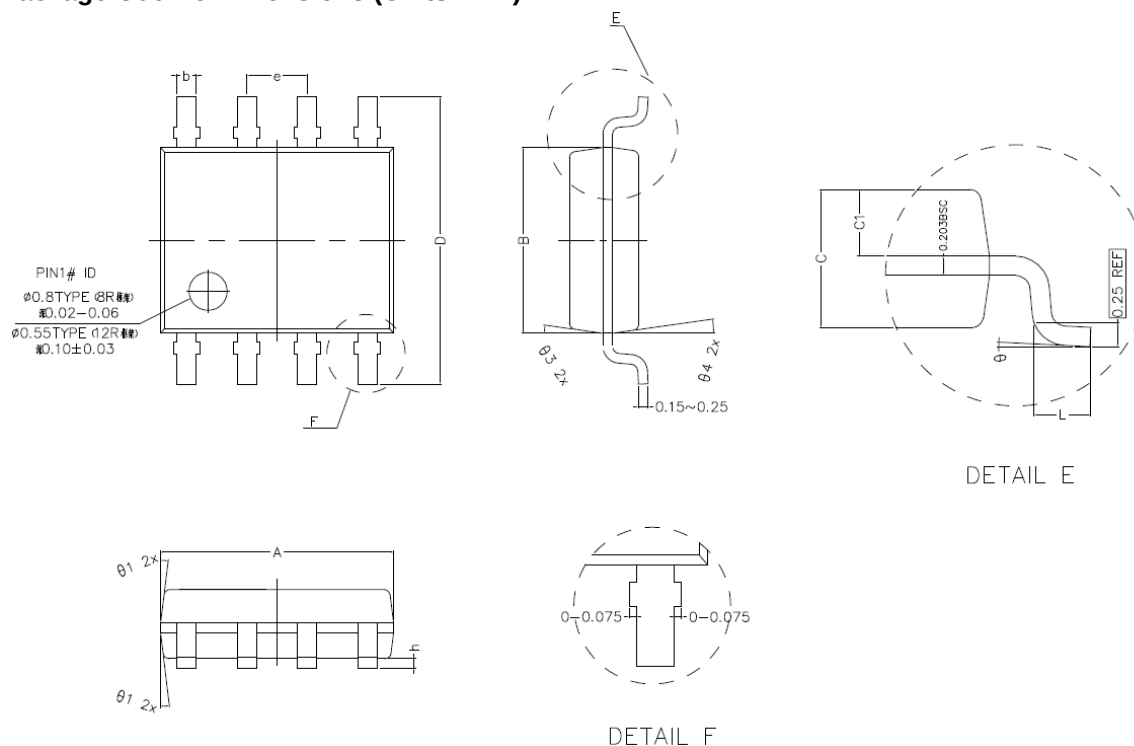


Figure10: Square Wave Pulse Duration (sec)

**-30V/-16A P-Channel Advanced Power MOSFET****Test Circuit and Waveform:****Figure A Gate Charge Test Circuit & Waveforms****Figure B Switching Test Circuit & Waveforms**

**-30V/-16A 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		
theta1	7° TYPE(8R) 12° TYPE(12R)		
theta2	7° TYPE(8R) 10° TYPE(12R)		
theta3	8° TYPE(8R) 12° TYPE(12R)		
theta4	8° TYPE(8R) 10° TYPE(12R)		
theta	0° ~ 8°		