PTS9468

40V/18A N-Channel Advanced Power MOSFET

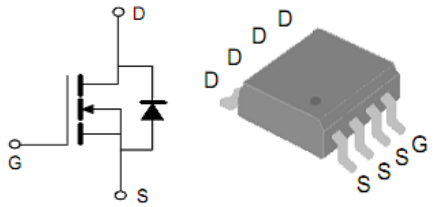
Features

- High density cell design for ultra low Rdson
- Fully characterized Avalanche voltage and current

BVDSS	40	V
ID	18	A
RDSON@VGS=10V	5.6	mΩ
RDSON@VGS=4.5V	6.2	mΩ

Applications

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply



SOP-8

Order Information

Product	Package	Marking	Reel Size	Reel	Carton
PTS9468	SOP-8	PTS9468	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		40	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	18	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested (Note1)	TA =25°C	80	A
I_D	Continuous Drain current	TA =25°C	18	A
P_D	Maximum Power Dissipation	TA =25°C	3	W
$R_{\theta JA}$	Thermal Resistance Junction−to−Ambient (Note2)		42	°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	40	--	--	V
I_{DSS}	Zero Gate Voltage Drain current	VDS=40V,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	--	3	V
$R_{DS(ON)}$	Drain-Source On-State Resistance (Note3)	VGS=10V, ID=15A	--	5.6	7	mΩ
		VGS=4.5V, ID=11A	--	6.2	10	
G_{FS}	Forward Transconductance	VDS=15V,ID=10V	--	40	--	S
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated) (Note4)						
C_{iss}	Input Capacitance	VDS=20V, VGS=0V, F=1MHz	--	3091	--	pF
C_{oss}	Output Capacitance		--	327	--	pF
C_{rss}	Reverse Transfer Capacitance		--	272	--	pF
Q_g	Total Gate Charge	VDS=20V, ID=10A, VGS=10V	--	62	--	nC
Q_{gs}	Gate-Source Charge		--	7	--	nC
Q_{gd}	Gate-Drain Charge		--	19	--	nC
Switching Characteristics (Note4)						
$t_{d(on)}$	Turn-on Delay Time	VDS=20V, ID=10A, RG=2.7Ω, VGS=10V	--	7	--	nS
t_r	Turn-on Rise Time		--	20	--	nS
$t_{d(off)}$	Turn-off Delay Time		--	39	--	nS
t_f	Turn-off Fall Time		--	19	--	nS
Source- Drain Diode Characteristics@ TJ = 25°C (unless otherwise stated)						
V_{SD}	Forward on voltage	IS=10A,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. Guranteed by design, not subject to production testing.

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Typical Characteristics

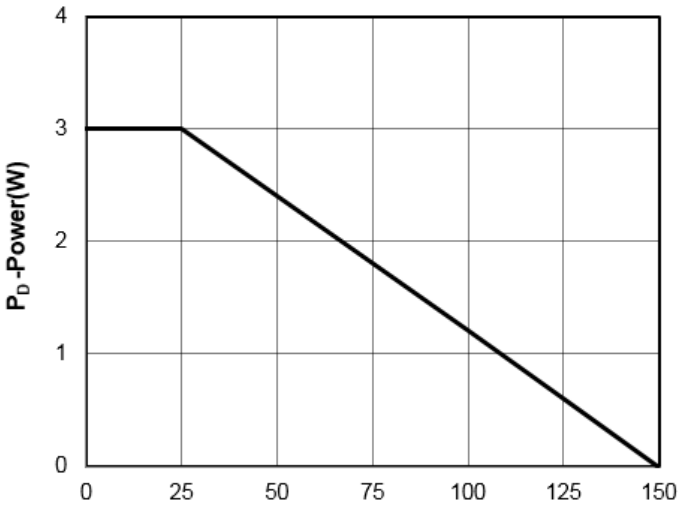


Figure1：T_J Junction Temperature（°C）

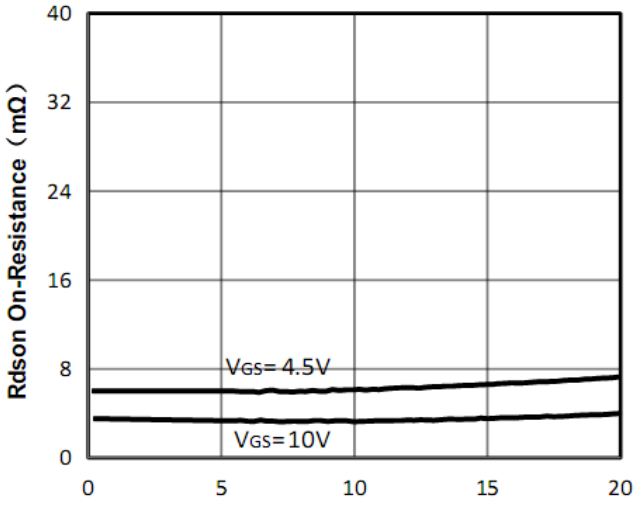


Figure2：I_D Drain Current（A）

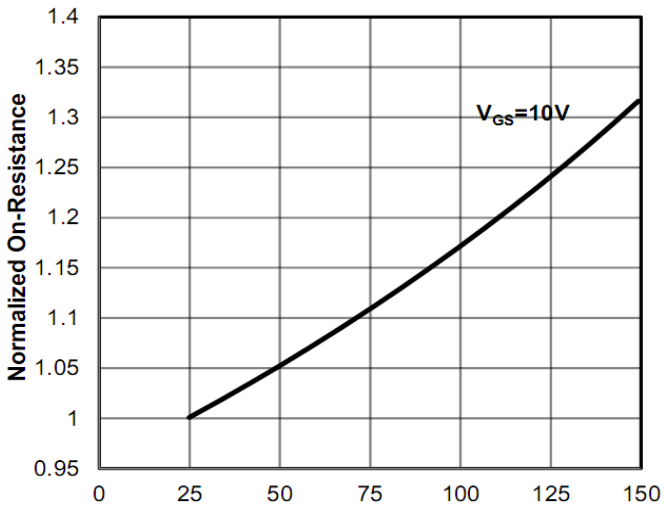


Figure3：T_J Junction Temperature（°C）

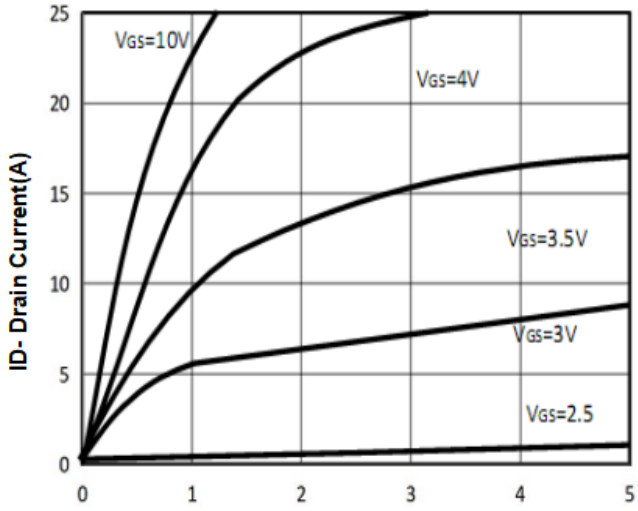


Figure4：V_{DS} Drain-Source Voltage（V）

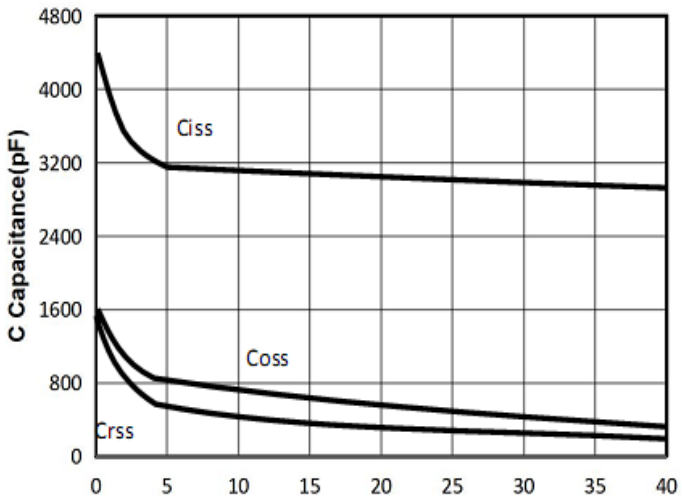


Figure5：V_{DS} Drain-Source Voltage（V）

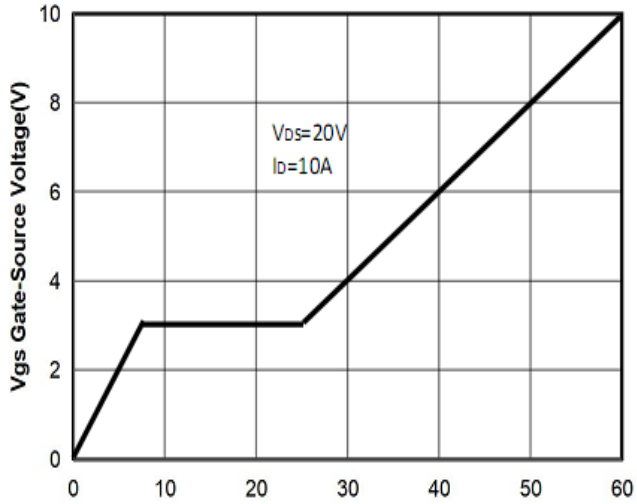


Figure6：Qg Gate Charge（nC）

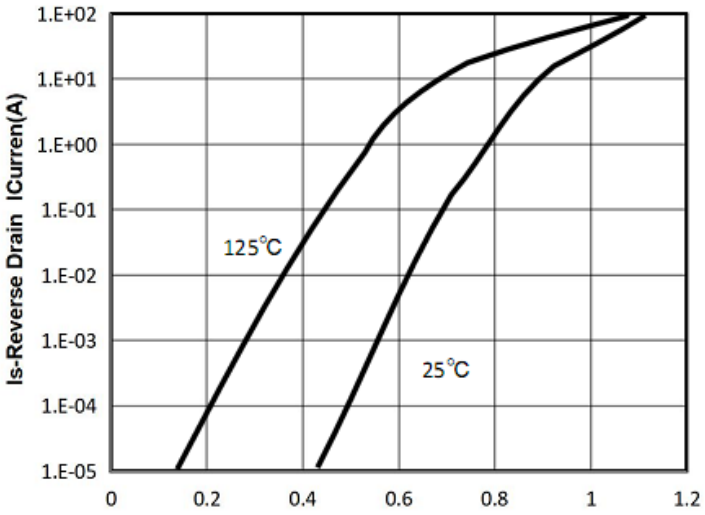


Figure7：Vsd Source-Drain Voltage（V）

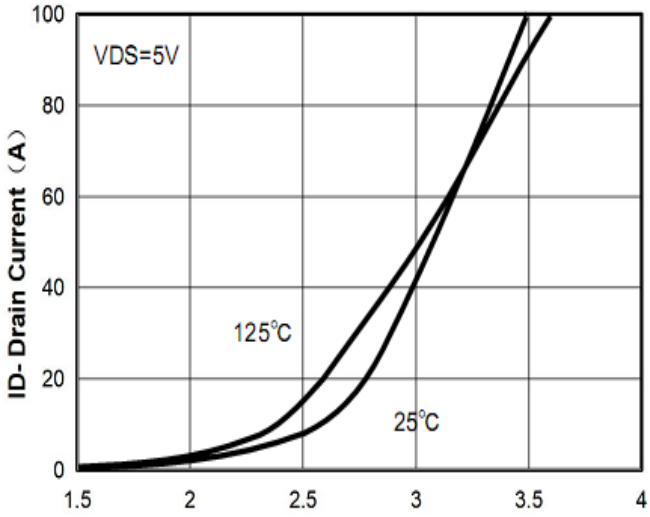


Figure8：Vgs Gate-Source Voltage（V）

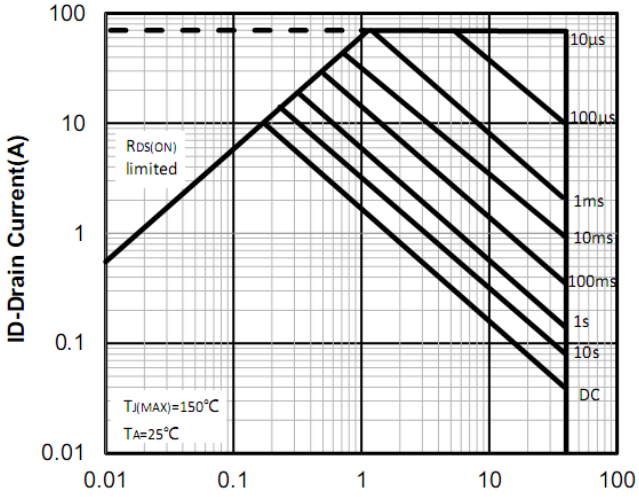


Figure9：VDS Drain -Source Voltage（V）

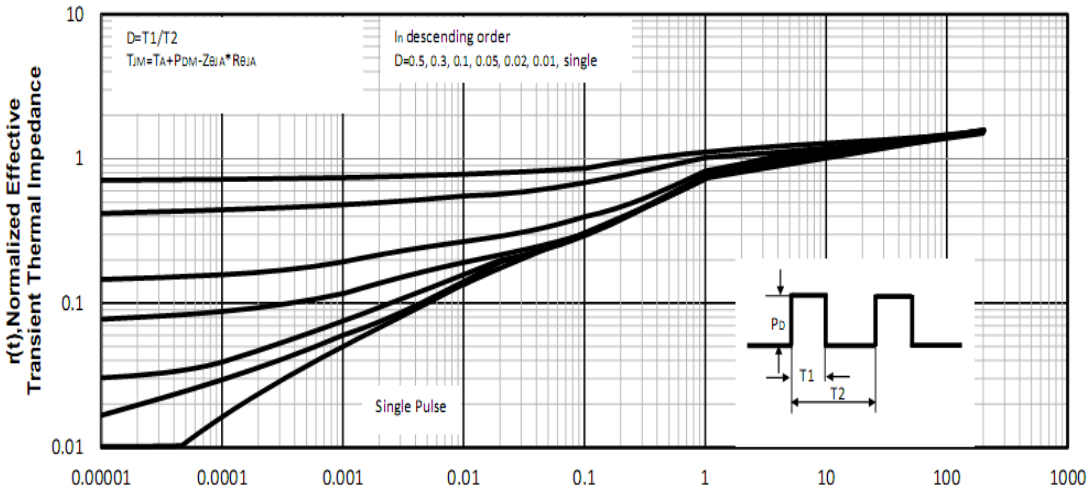


Figure10：Square Wave Pulse Duration（sec）

Test Circuit and Waveform:

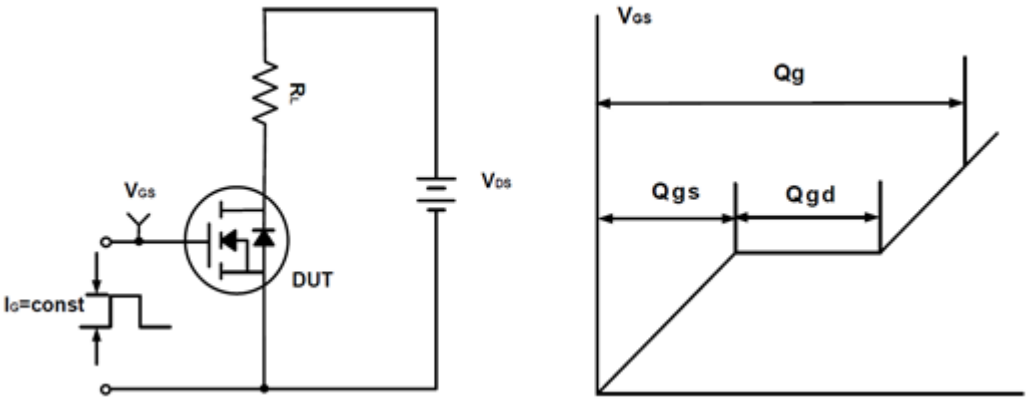


Figure A Gate Charge Test Circuit &Waveforms

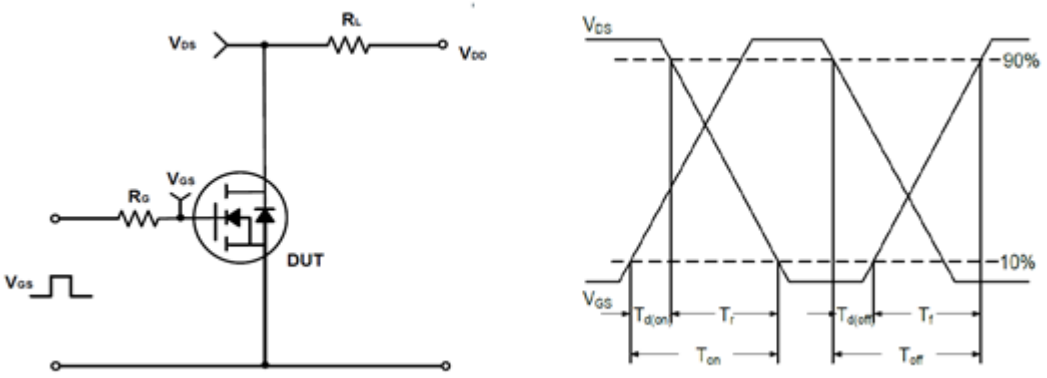
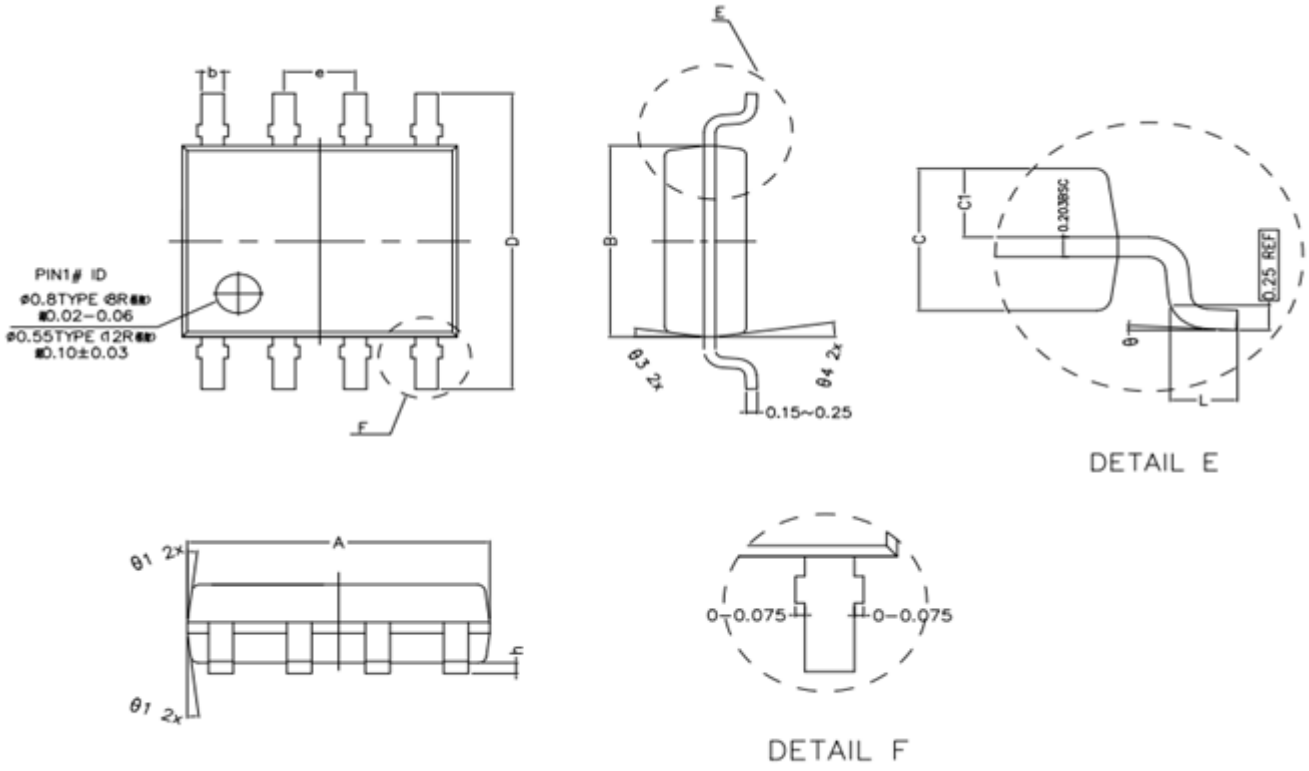


Figure B Switching Test Circuit & Waveforms

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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°		