



30V/28A Dual N-Channel Advanced Power MOSFET

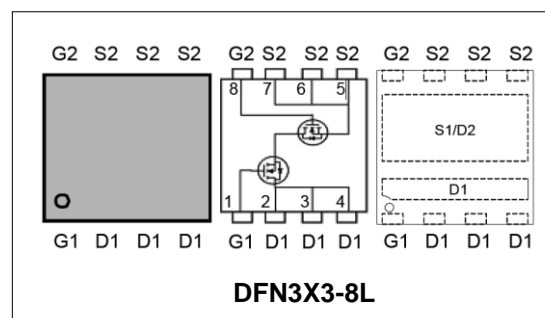
Features

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

BVDSS	30	V
ID	28	A
RDSON@VGS=10V	7.5	mΩ
RDSON@VGS=4.5V	9.7	mΩ

Applications

- Telecom DC/DC
- Synchronous buck converter
- POL



Order Information

Product	Package	Marking	Reel Size	Reel	Carton
PTM3028DS	DFN3X3-8L	PTM3028DS	7inch	5000PCS	50000PCS

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	TC =25°C	28	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested (Silicon Limit) (Note1)	TC =25°C	84	A
I_D	Continuous Drain current	TC =25°C	28	A
P_D	Maximum Power Dissipation	TC =25°C	20	W
$R_{\theta JC}$	Thermal Resistance Junction-to-Case (Note2)		6.25	°C/W



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Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
Static Electrical Characteristics @ T_J = 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	1.5	2.5	V
R _{DS(ON)}	Drain-Source On-State Resistance (Note3)	VGS=10V, ID=13A	--	6.3	9	mΩ
		VGS=4.5V, ID=10A	--	8.3	13	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated) (Note5)						
C _{iss}	Input Capacitance	VDS=15V, VGS=0V, F=1MHz	--	983	--	pF
C _{oss}	Output Capacitance		--	207	--	pF
C _{rss}	Reverse Transfer Capacitance		--	121	--	pF
Q _g	Total Gate Charge	VDS=15V, ID=5A, VGS=10V	--	28	--	nC
Q _{gs}	Gate-Source Charge		--	7	--	nC
Q _{gd}	Gate-Drain Charge		--	5	--	nC
Switching Characteristics (Note5)						
t _{d(on)}	Turn-on Delay Time	VDS=20V, ID=10A, RG=3Ω, VGS=10V	--	8	--	nS
t _r	Turn-on Rise Time		--	15	--	nS
t _{d(off)}	Turn-off Delay Time		--	27	--	nS
t _f	Turn-off Fall Time		--	7	--	nS
Source- Drain Diode Characteristics @ T_J = 25°C (unless otherwise stated)						
V _{SD}	Forward on voltage	IS=15A,VGS=0V	--	0.85	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

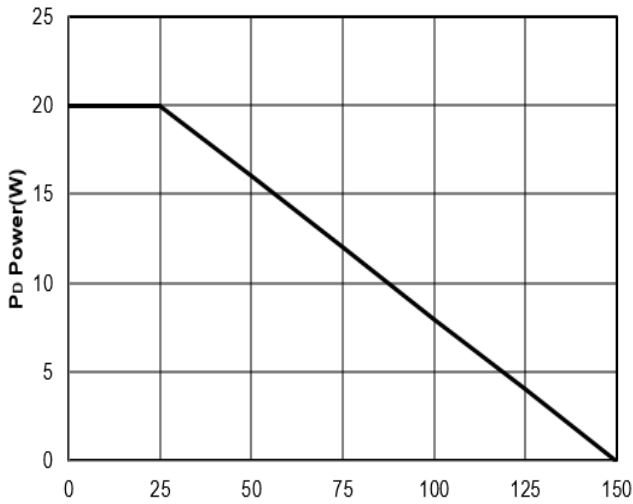


Figure1: Tj Junction Temperature (°C)

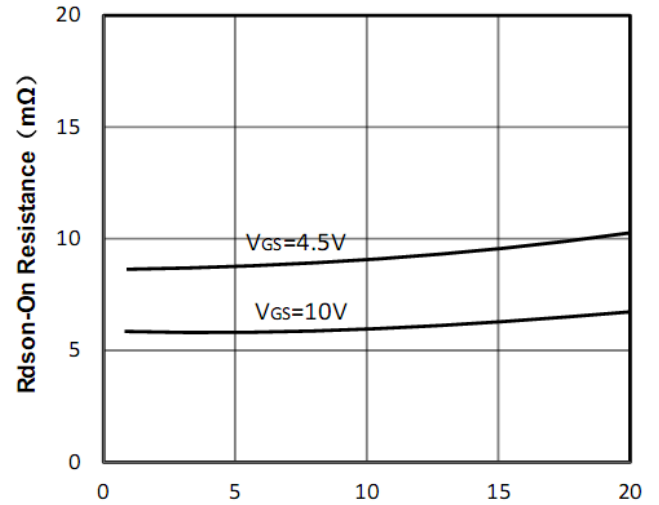


Figure2: Id Drain Current (A)

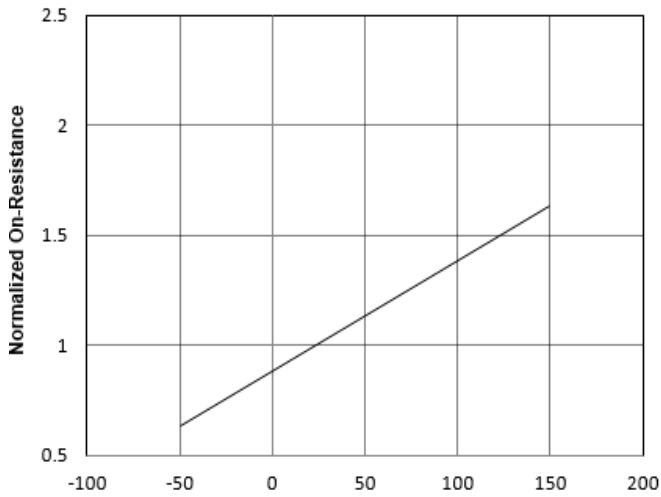


Figure3: Tj Junction Temperature (°C)

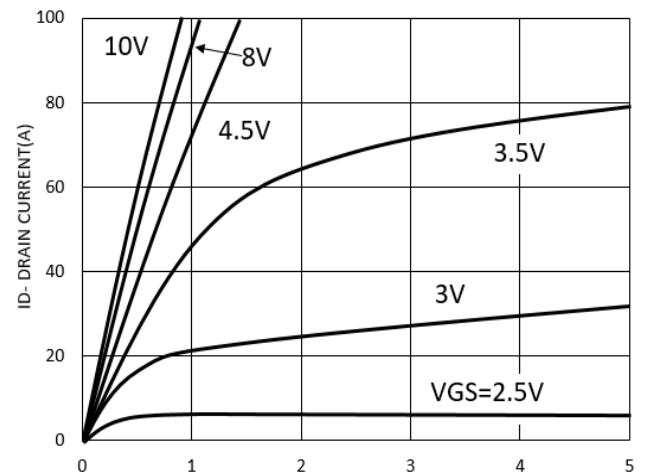


Figure4: Vds Drain-Source Voltage (V)

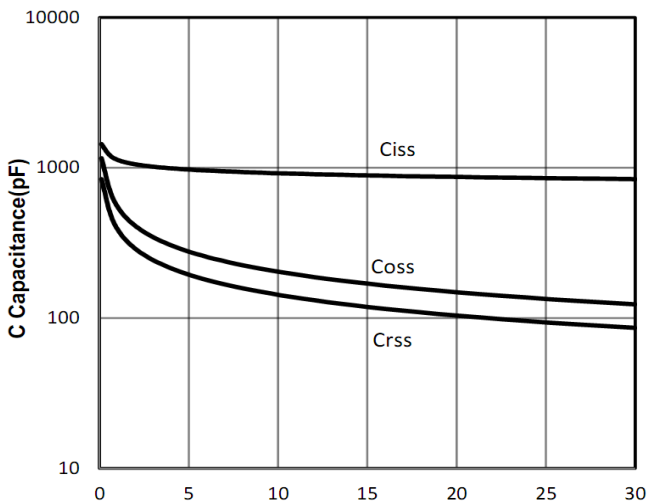


Figure5: Vds Drain-Source Voltage (V)

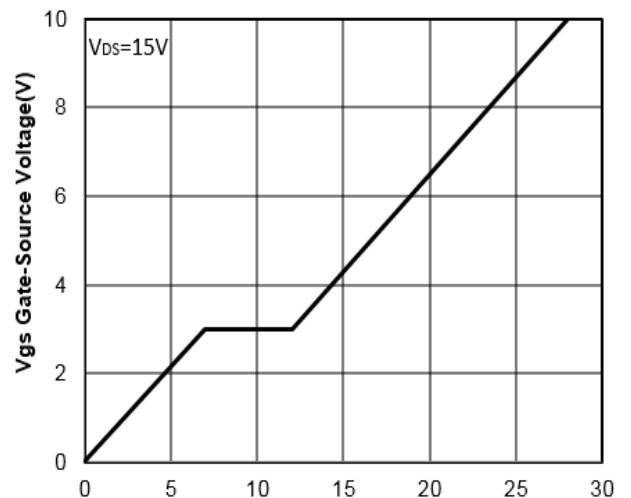


Figure6: Qg Gate Charge (nC)



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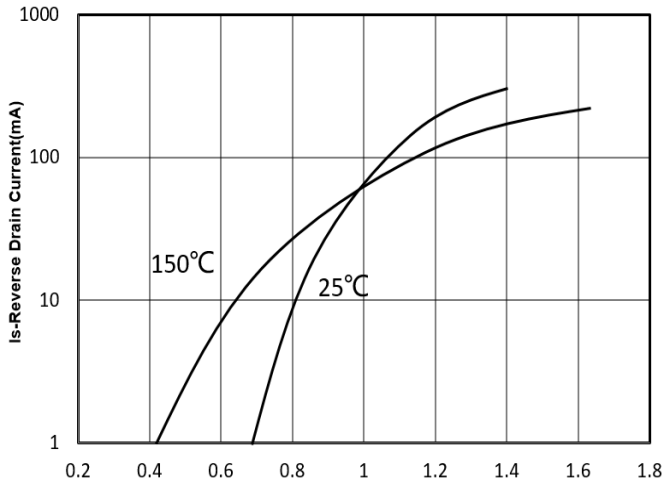


Figure7: Vsd Source-Drain Voltage (V)

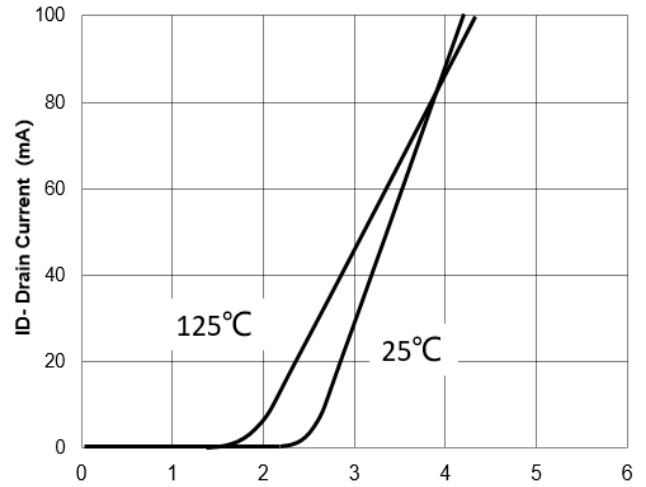


Figure8: Vgs Gate-Source Voltage (V)

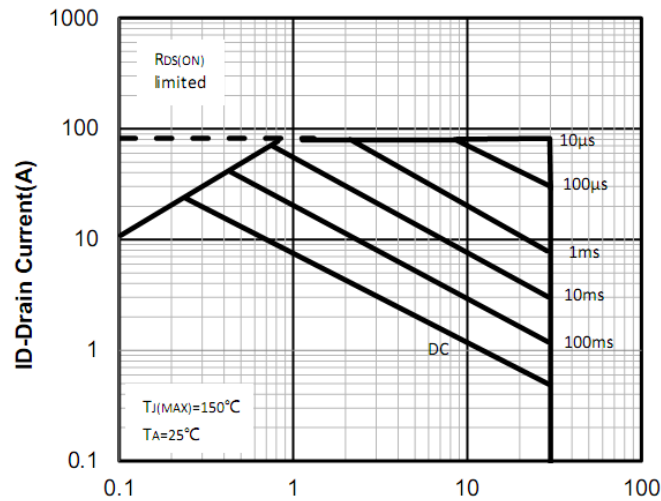


Figure9: VDS Drain -Source Voltage (V)

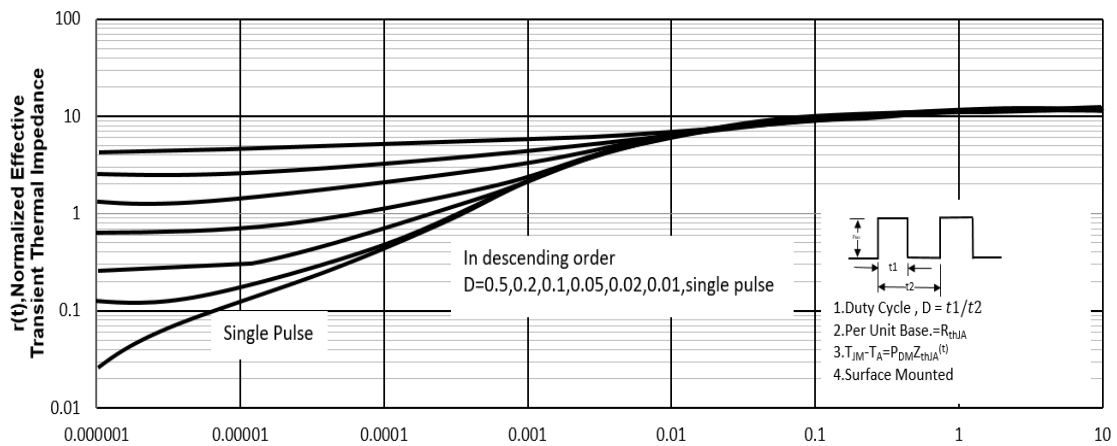


Figure10: Square Wave Pulse Duration (sec)

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Test Circuit and Waveform:

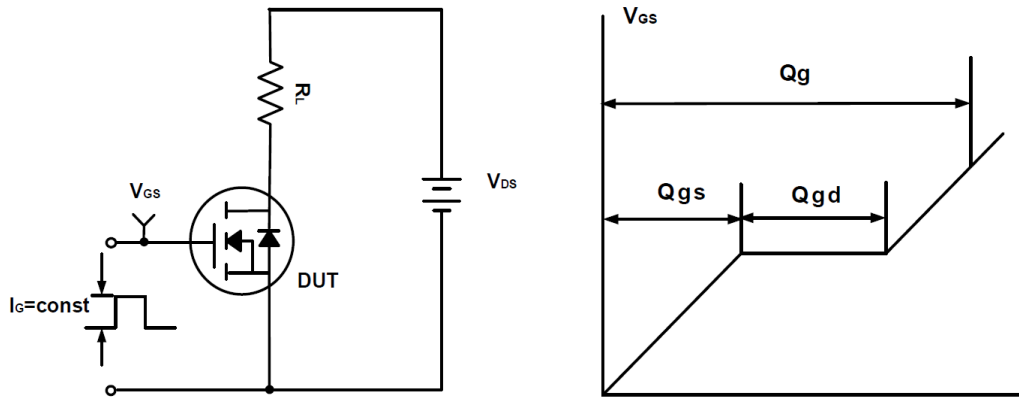


Figure A Gate Charge Test Circuit & Waveforms

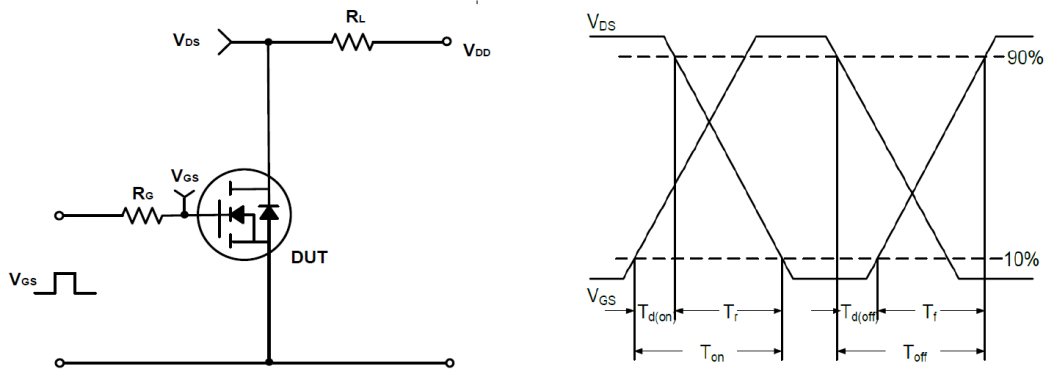
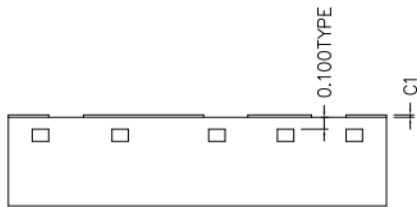
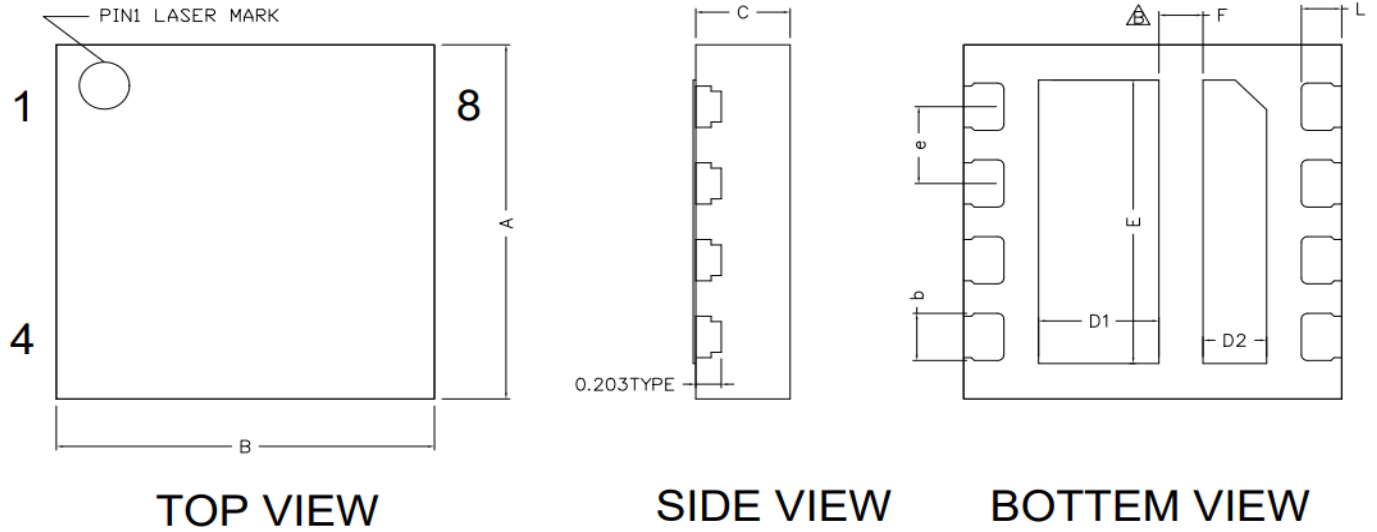


Figure B Switching Test Circuit & Waveforms



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DFN3X3-8L Package Outline Dimensions (Units: mm)



SIDE VIEW

	MIN	NORMAL	MAX
A	2.900	3.000	3.100
B	2.900	3.000	3.100
C	0.700	0.750	0.800
C1	0.005	—	0.020
D1	0.855	0.955	1.055
D2	0.405	0.505	0.605
E	2.300	2.400	2.500
F	0.35 TYPE		
L	0.270	0.320	0.370
b	0.350	0.400	0.450
e	0.650 TYPE		