

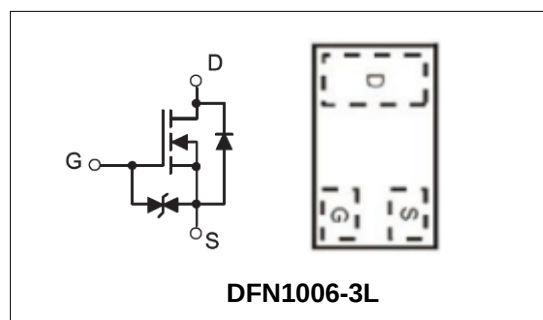
**20V/1.1A N-Channel Advanced Power MOSFET****Features**

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

BVDSS	20	V
ID	1.1	A
RDSON@VGS=4.5V	120	mΩ
RDSON@VGS=2.5V	190	mΩ
RDSON@VGS=1.8V	298	mΩ

Applications

- Load Switch
- PWM Application
- Power management

**Order Information**

Product	Package	Marking	Reel Size	Reel	Carton
PTM2201E	DFN1006-3L	M1Y	7inch	10000PCS	400000PCS

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{(BR)DSS}	Drain-Source Breakdown Voltage		20	V
V _{GS}	Gate-Source Voltage		±10	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	1	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested (Silicon Limit) (Note1)	TC =25°C	3.1	A
I _D	Continuous Drain current	TC =25°C	1.1	A
P _D	Maximum Power Dissipation	TC =25°C	0.32	W
R _{θJC}	Thermal Resistance Junction-to-Case (Note2)		379	°C/W



20V/1.1A N-Channel Advanced Power MOSFET

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	20	--	--	V
I _{DSS}	Zero Gate Voltage Drain current	VDS=20V,VGS=0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	VGS=±10V,VDS=0V	--	--	±10	nA
V _{GS(TH)}	Gate Threshold Voltage	VDS=VGS,ID=250μA	0.4	0.6	1	V
R _{DS(ON)}	Drain-Source On-State Resistance (Note3)	VGS=4.5V, ID=0.5A	--	120	180	mΩ
		VGS=2.5V, ID=0.5A	--	190	270	mΩ
		VGS=1.8V, ID=0.35A	--	298	450	mΩ
Dynamic Electrical Characteristics @ T _J = 25°C (unless otherwise stated) (Note5)						
C _{iss}	Input Capacitance	VDS=10V, VGS=0V, F=1MHz	--	66	--	pF
C _{oss}	Output Capacitance		--	18	--	pF
C _{rss}	Reverse Transfer Capacitance		--	9	--	pF
Q _g	Total Gate Charge	VDS=10V, ID=0.7A, VGS=4.5V	--	1	--	nC
Q _{gs}	Gate-Source Charge		--	0.28	--	nC
Q _{gd}	Gate-Drain Charge		--	0.22	--	nC
Switching Characteristics (Note4)						
t _{d(on)}	Turn-on Delay Time	VDD=10V, ID=0.6A, VGS=4.5V, RG=3Ω, RL=6Ω	--	20	--	nS
t _r	Turn-on Rise Time		--	13	--	nS
t _{d(off)}	Turn-off Delay Time		--	40	--	nS
t _f	Turn-off Fall Time		--	12	--	nS
Source- Drain Diode Characteristics@ T _J = 25°C (unless otherwise stated)						
V _{SD}	Forward on voltage	IS=0.5A,VGS=0V	--	--	1.3	V

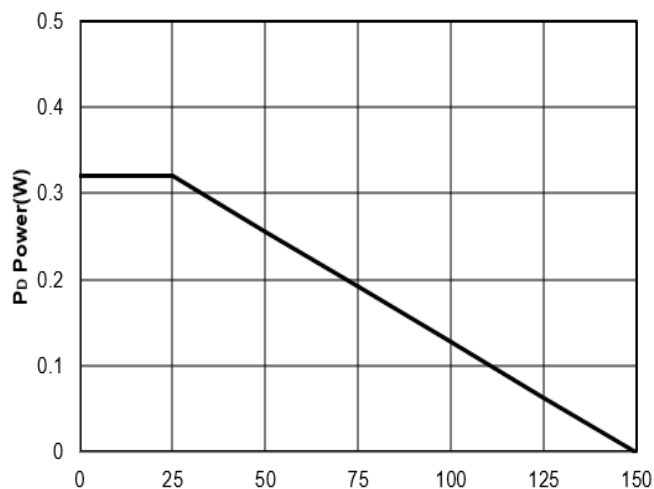
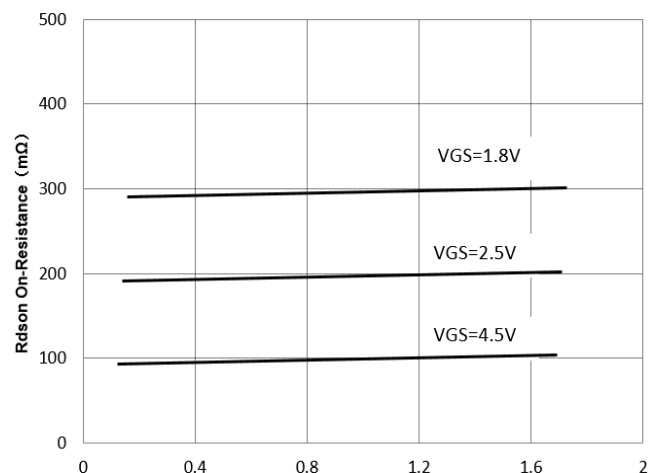
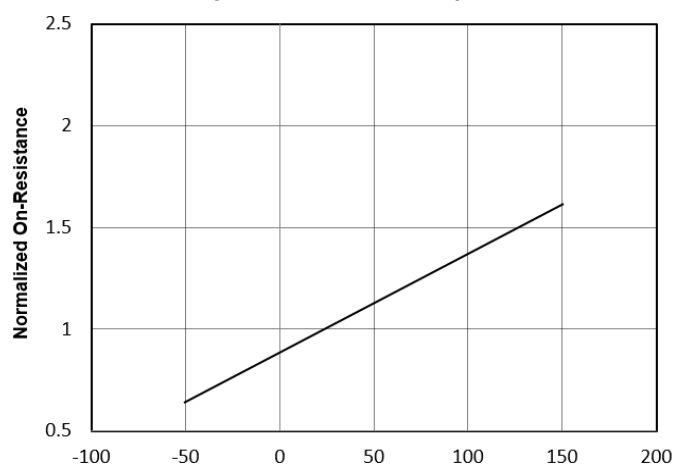
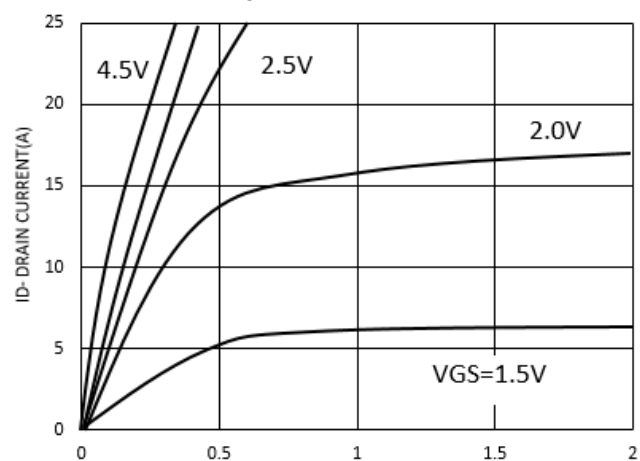
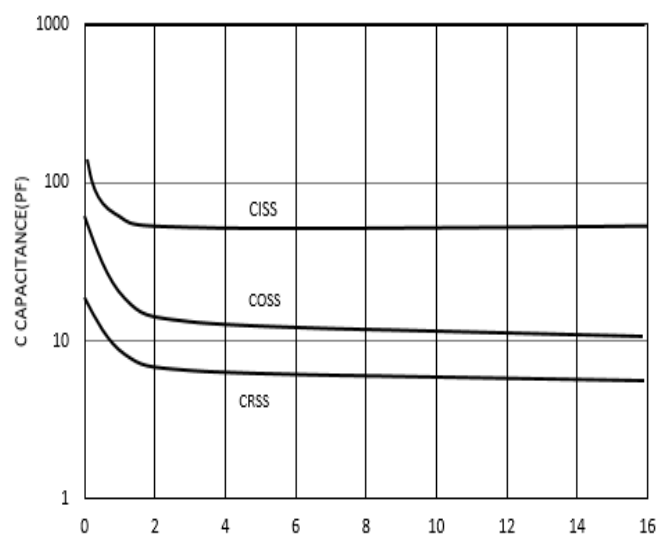
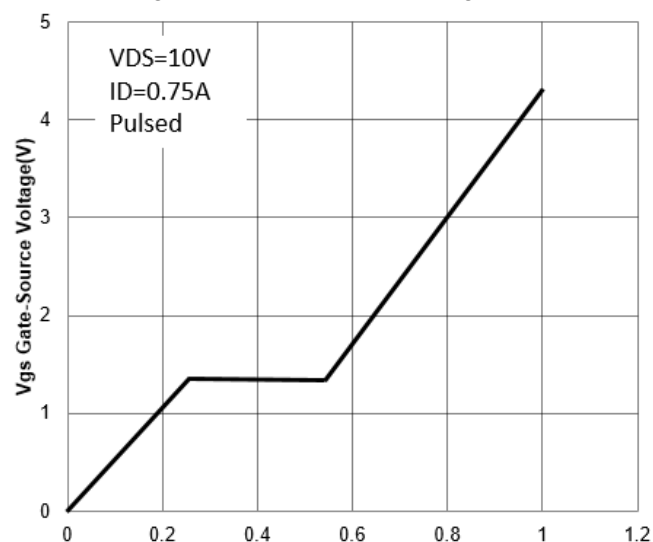
Note:

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. Guranteed by design, not subject to production testing.



20V/1.1A N-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)



20V/1.1A N-Channel Advanced Power MOSFET

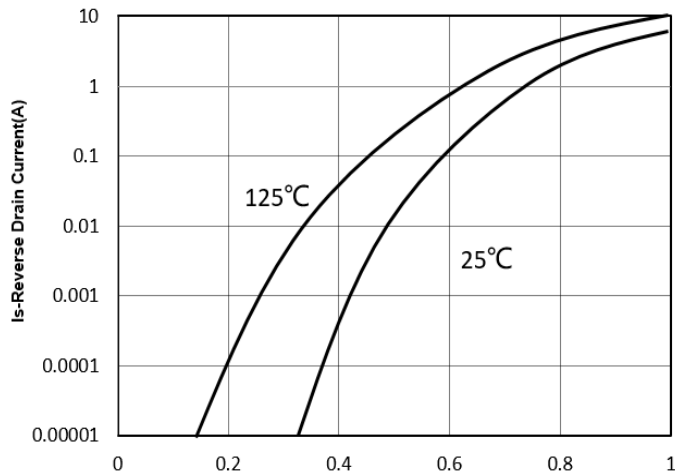


Figure7: V_{sd} Source-Drain Voltage (V)

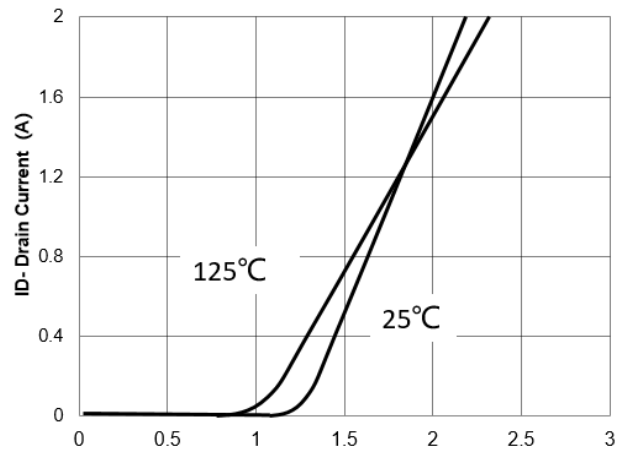


Figure8: V_{gs} Gate-Source Voltage (V)

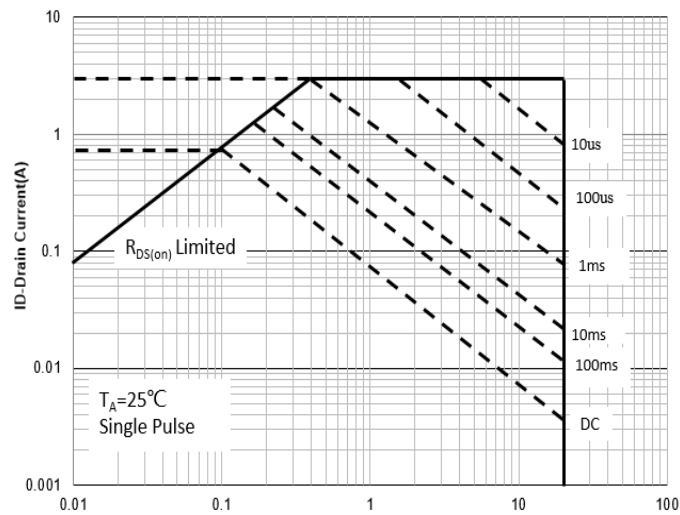


Figure9: V_{DS} Drain -Source Voltage (V)

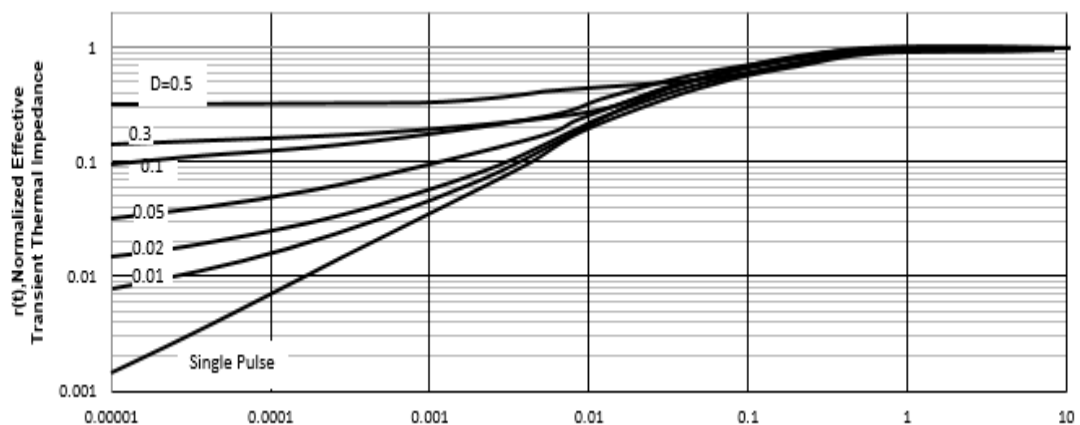


Figure10: Square Wave Pulse Duration (sec)



20V/1.1A N-Channel Advanced Power MOSFET

Test Circuit and Waveform:

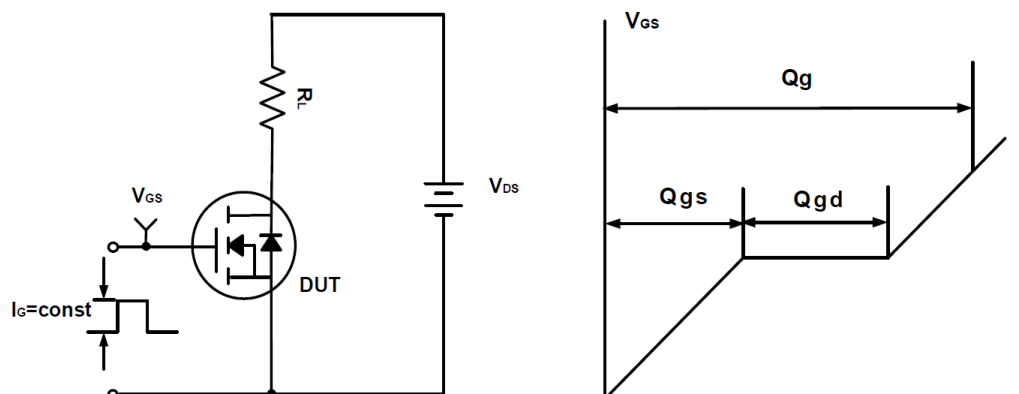


Figure A Gate Charge Test Circuit & Waveforms

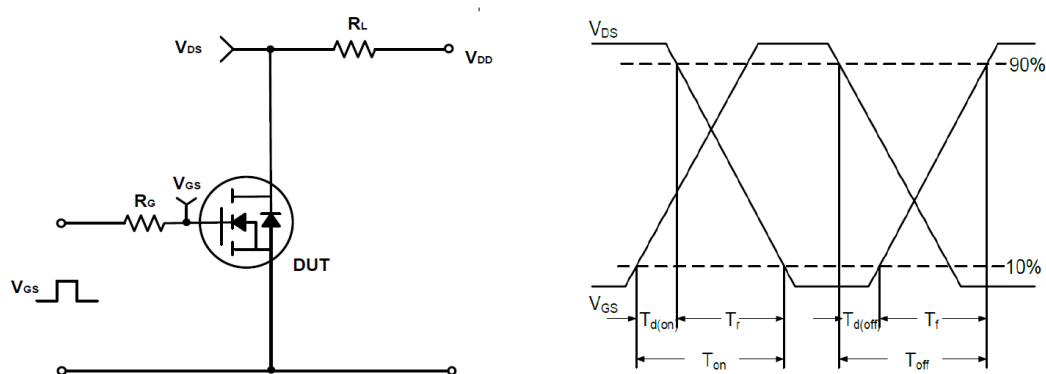


Figure B Switching Test Circuit & Waveforms

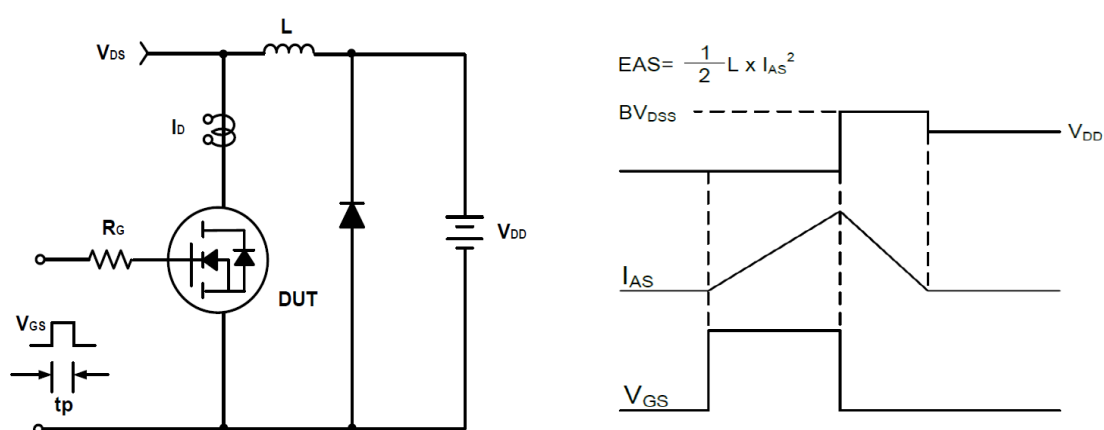
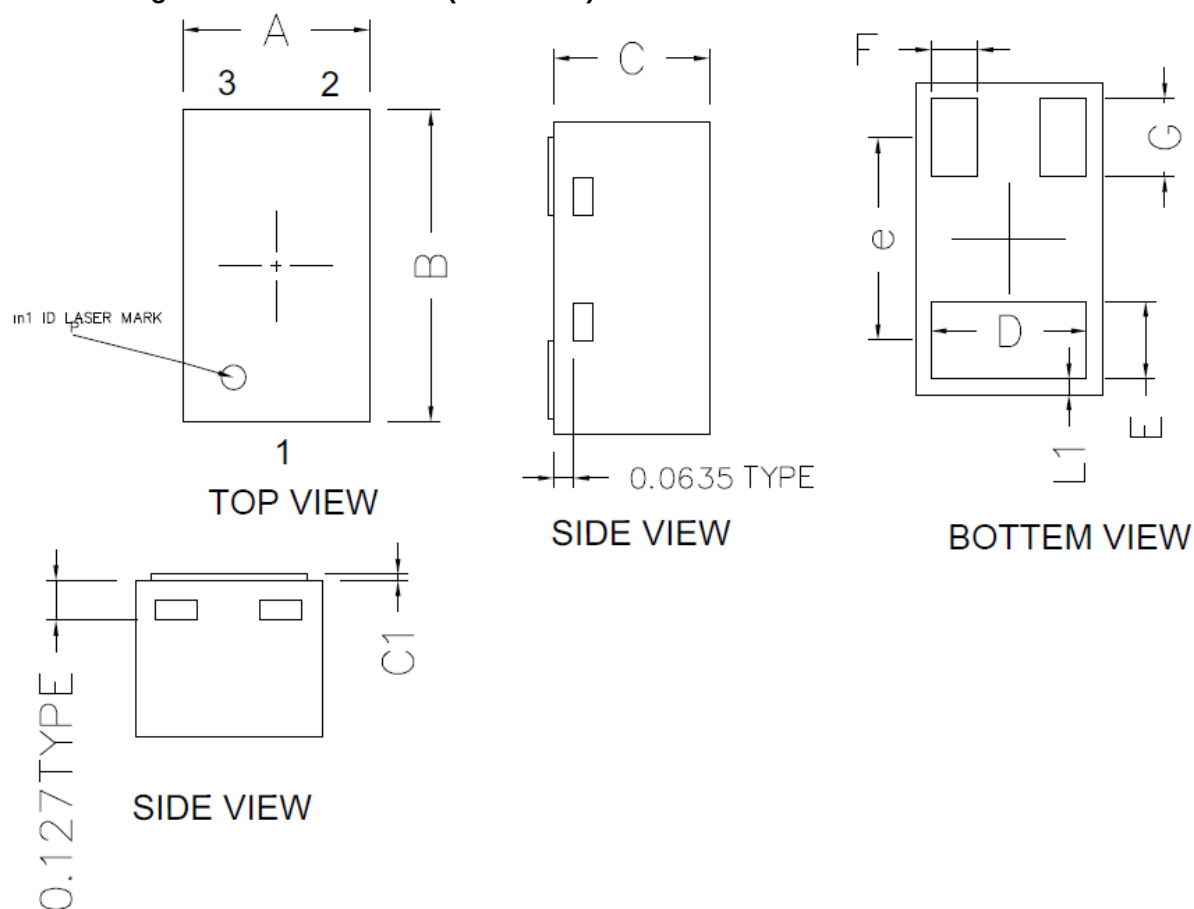


Figure C Unclamped Inductive Switching Circuit & Waveforms

**DFN1006-3L Package Outline Dimensions (Units: mm)**

COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	0.550	0.600	0.650
B	0.950	1.000	1.050
C	0.450	0.500	0.550
C1	0.005	—	0.020
D	0.450	0.500	0.550
E	0.200	0.250	0.300
F	0.100	0.150	0.200
G	0.200	0.250	0.300
L1	0.050 TYPE		
e	0.650 TYPE		