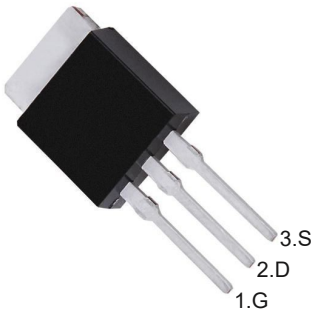
PJM70H08NTD

N-Channel Enhancement Mode Power MOSFET

Features

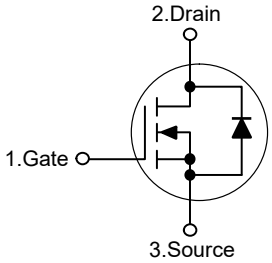
- Fast Switching
- Low reverse transfer capacitances
- V_{DS}= 700V,I_D= 8A
  $R_{DS(on)}$< 1.2Ω @V_{GS}= 10V

TO-251



1. Gate 2.Drain 3.Sourse

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25℃ case temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	700	V
Gate-Source Voltage	V_{GS}	±30	V
Drain Current-Continuous	I_D	8	A
Drain Current-Pulsed Note1	I_{DM}	32	A
Single Pulsed Avalanche Energy Note4	E_{AS}	550	mJ
Maximum Power Dissipation	P_D	120	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Maximum Junction-to-Ambient Note2	$R_{\theta JA}$	62.5	°C/W
Maximum Junction-to-Case Note2	$R_{\theta JC}$	1.04	°C/W

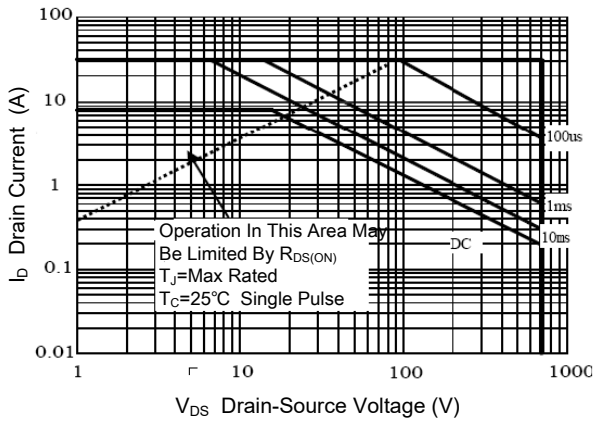
Electrical Characteristics

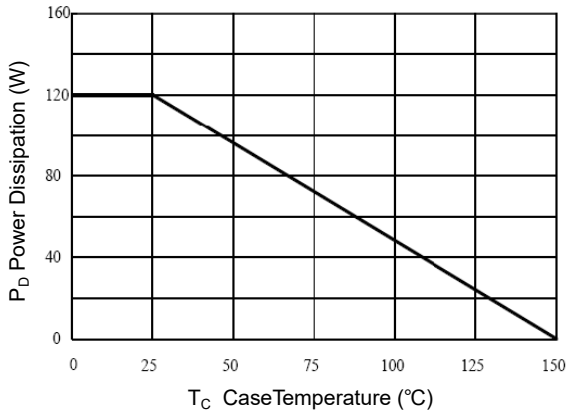
(T_C=25℃ unless otherwise specified)

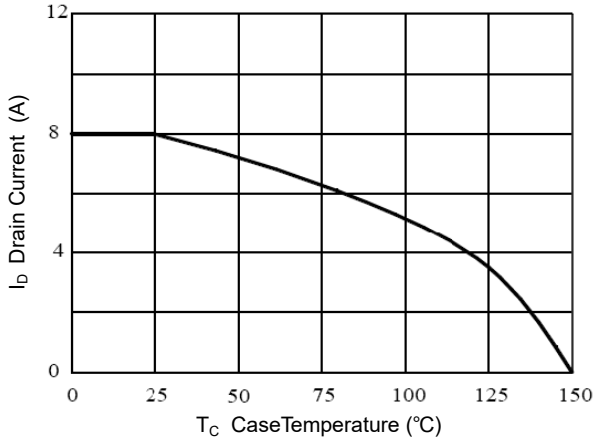
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	700	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=700V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±30V,V_{DS}=0V	--	--	±10	μA
Gate Threshold Voltage Note3	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	2	--	4	V
Drain-Source On-Resistance Note3	$R_{DS(on)}$	V_{GS}=10V,I_D=4A	--	0.9	1.2	Ω
Forward Transconductance Note3	g_{FS}	V_{DS}=15V,I_D=4A	--	4.5	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V,f=1MHz	--	1450	--	pF
Output Capacitance	C_{oss}		--	110	--	pF
Reverse Transfer Capacitance	C_{rss}		--	12	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=350V,I_D=8A, V_{GS}=10V,R_{GEN}=10Ω	--	21	--	nS
Turn-on Rise Time	t_r		--	22.1	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	52.2	--	nS
Turn-off Fall Time	t_f		--	25.6	--	nS
Total Gate Charge	Q_g	V_{DD}=350V,I_D=8A, V_{GS}=10V	--	35.5	--	nC
Gate-Source Charge	Q_{gs}		--	6.0	--	nC
Gate-Drain Charge	Q_{gd}		--	15.0	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage Note3	V_{SD}	V_{GS}=0V,I_S=8A	--	--	1.5	V
Diode Forward Current Note2	I_S		--	--	8	A

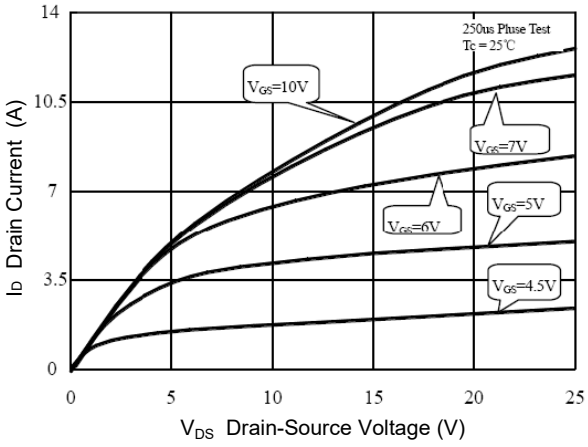
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2.Surface Mounted on FR4 Board, t ≤ 10 sec.
3.Pulse Test: Pulse width≤380μs, duty cycle≤2%.
4.Test Condition: L=10.0mH, I_D=8A, Start T_J=25℃.

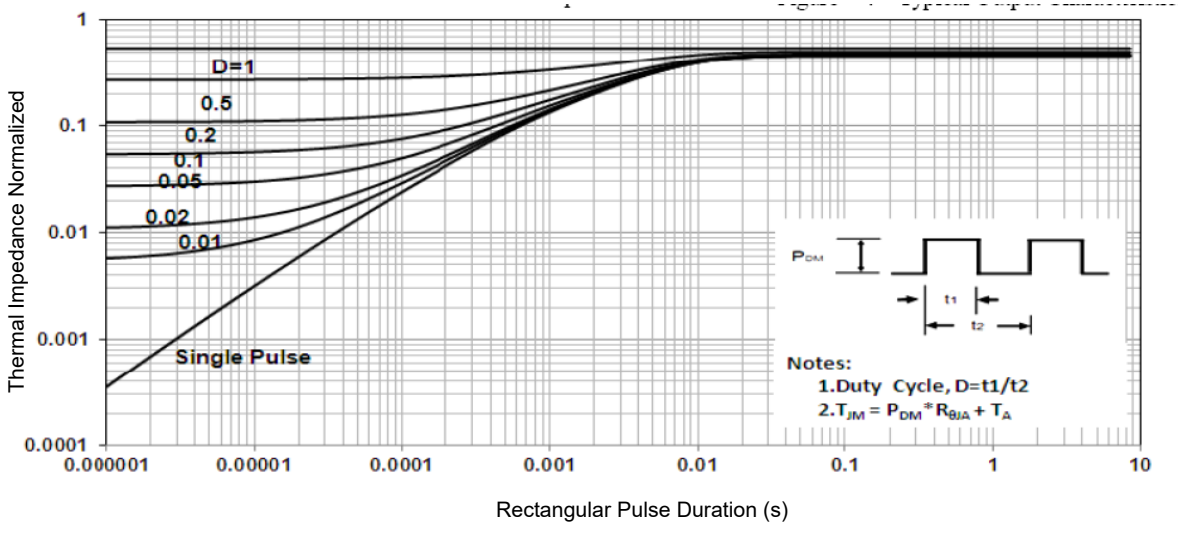
Typical Characteristic Curves

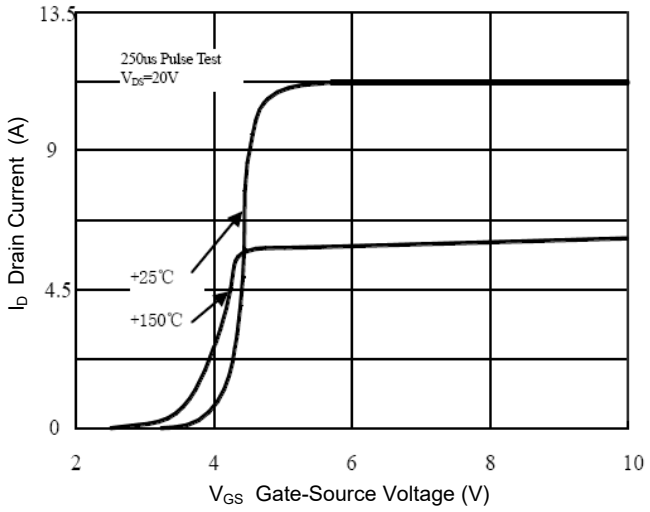


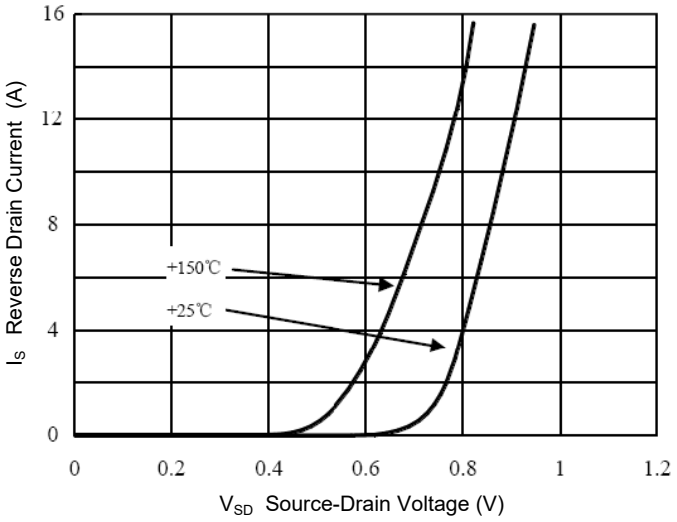


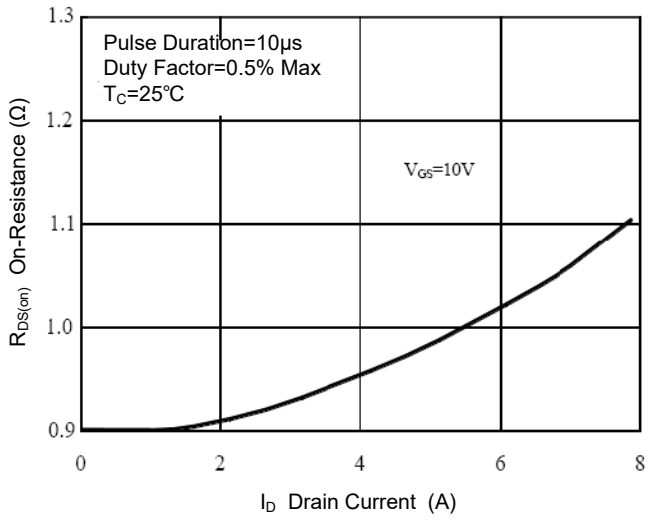


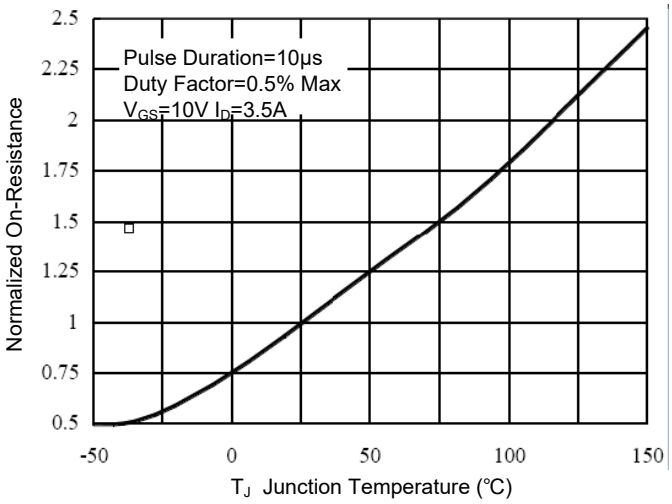


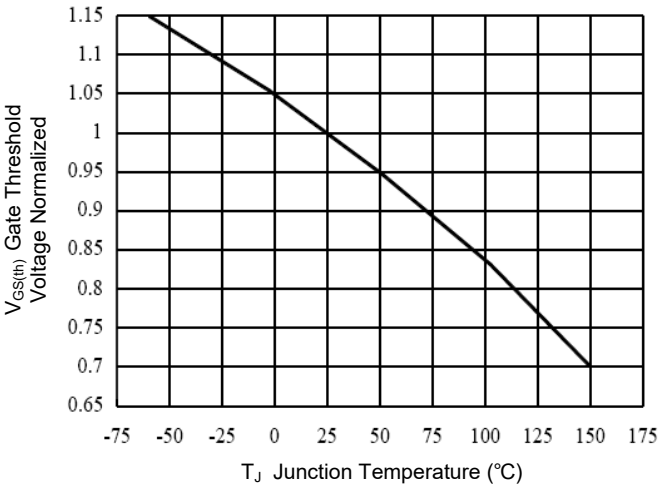


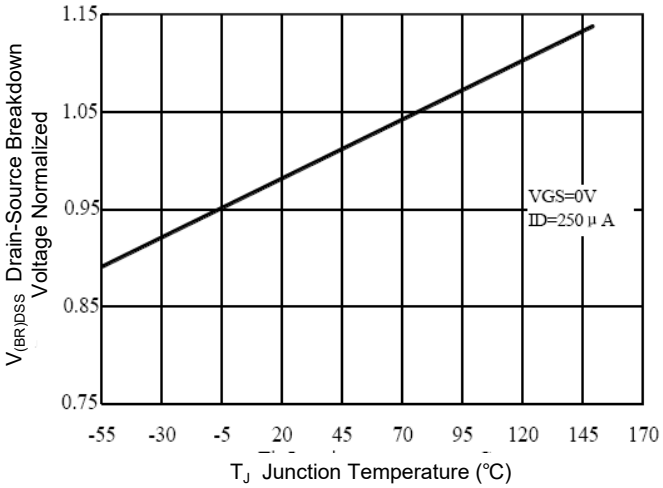

250us Pulse Test
V_{DS}=20V
+25℃
+150℃
I_D Drain Current (A)
V_{GS} Gate-Source Voltage (V)

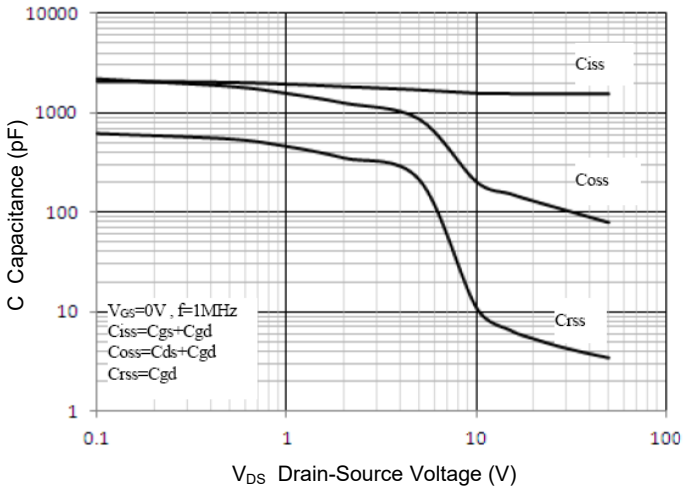

+150℃
+25℃
I_S Reverse Drain Current (A)
V_{SD} Source-Drain Voltage (V)

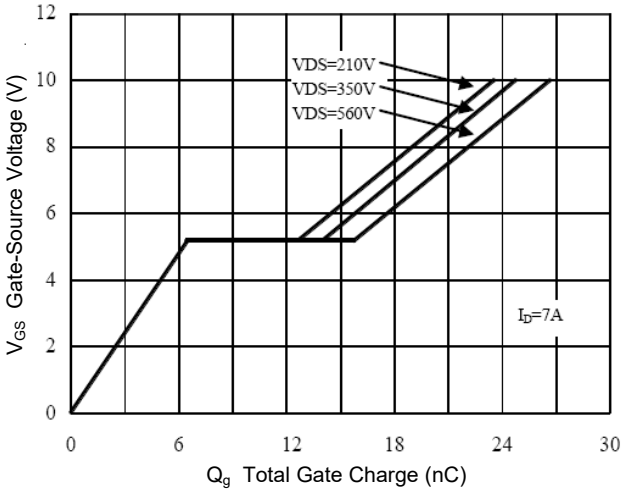

Pulse Duration=10μs
Duty Factor=0.5% Max
T_C=25℃
V_{GS}=10V
$R_{DS(on)}$ On-Resistance (Ω)
I_D Drain Current (A)


Pulse Duration=10μs
Duty Factor=0.5% Max
V_{GS}=10V I_D=3.5A
Normalized On-Resistance
T_J Junction Temperature (℃)


1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
VGS(th) Gate Threshold Voltage Normalized
-75 -50 -25 0 25 50 75 100 125 150 175
TJ Junction Temperature (℃)


1.15
1.05
0.95
0.85
0.75
V(BR)DSS Drain-Source Breakdown Voltage Normalized
VGS=0V
ID=250μA
-55 -30 -5 20 45 70 95 120 145 170
TJ Junction Temperature (℃)


10000
1000
100
10
1
C Capacitance (pF)
Ciss
Coss
Crss
VGS=0V , f=1MHz
Ciss=Cgs+Cgd
Coss=Cds+Cgd
Crss=Cgd
0.1 1 10 100
VDS Drain-Source Voltage (V)


12
10
8
6
4
2
0
VGS Gate-Source Voltage (V)
VDS=210V
VDS=350V
VDS=560V
ID=7A
0 6 12 18 24 30
Qg Total Gate Charge (nC)

Package Outline

TO-251

Dimensions in mm