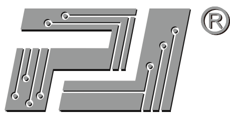


PJM10H80NTE

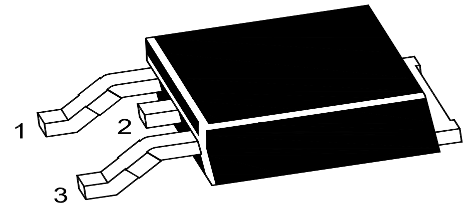
N-Channel Enhancement Mode Power MOSFET

Features

- Excellent package for good heat dissipation
- High density cell design for ultra low $R_{DS(on)}$
- V_{DS}= 100V, I_D= 80A

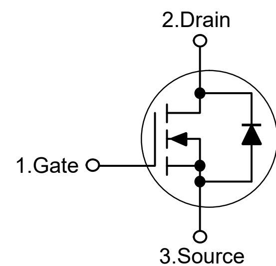
  $R_{DS(on)}$< 8.5mΩ @V_{GS}= 10V

TO-252



1. Gate 2.Drain 3.Sourse

Schematic Diagram



Applications

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

Absolute Maximum Ratings

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	80	A
Drain Current-Pulsed [Note1]	I_{DM}	320	A
Single pulse avalanche energy [Note4]	E_{AS}	320	mJ
Maximum Power Dissipation	P_D	125	W
Junction Temperature	T_J	175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

Thermal Characteristics

Maximum Junction-to-Case [Note2]	$R_{\theta JC}$	1.25	°C/W

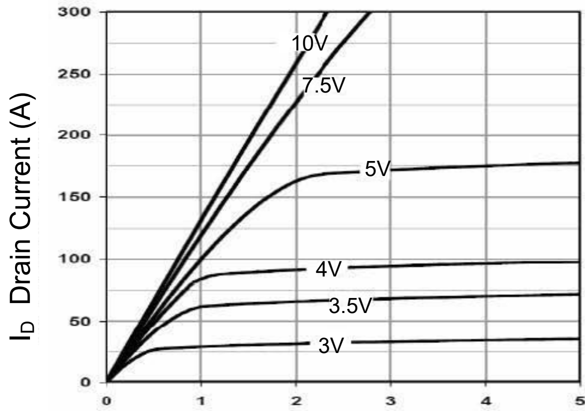
Electrical Characteristics

(Ta=25℃ unless otherwise specified)

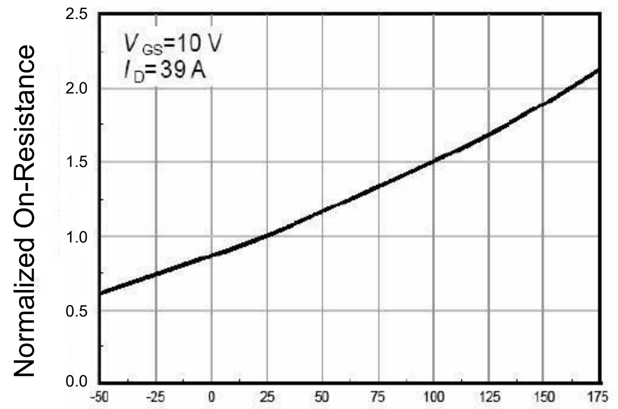
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	100	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	--	--	±0.1	μA
Gate Threshold Voltage Note3	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1	1.7	2.5	V
Drain-Source On-Resistance Note3	$R_{DS(on)}$	V_{GS}=10V,I_D=40A	--	7.2	8.5	mΩ
Forward Transconductance Note3	g_{FS}	V_{DS}=10V,I_D=40A	40	--	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=50V,V_{GS}=0V,f=1MHz	--	4200	--	pF
Output Capacitance	C_{oss}		--	354	--	pF
Reverse Transfer Capacitance	C_{rss}		--	23	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=50V,V_{GS}=10V, I_D=40A R_G=4.7Ω	--	15	--	nS
Turn-on Rise Time	t_r		--	10	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	41	--	nS
Turn-off Fall Time	t_f		--	6	--	nS
Total Gate Charge	Q_g	V_{DD}=50V, V_{GS}=10V,I_D=40A	--	65	--	nC
Gate-Source Charge	Q_{gs}		--	15.3	--	nC
Gate-Drain Charge	Q_{gd}		--	9	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage Note3	V_{SD}	V_{GS}=0V,I_S=80A	--	--	1.2	V
Diode Forward Current Note2	I_S		--	--	80	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≤300μs, duty cycle≤2%
4. E_{AS} condition : T_j=25℃,V_{DD}=50V,V_G=10V,L=0.5mH,R_G=25Ω

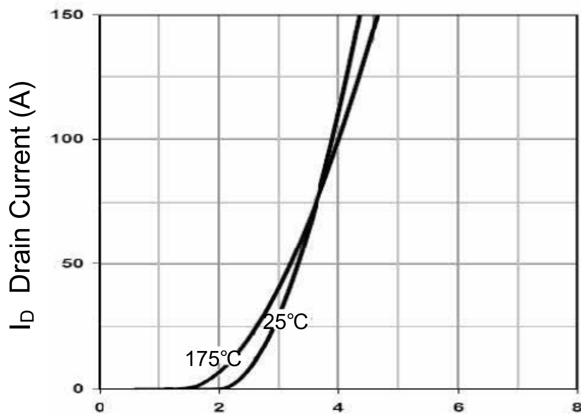
Typical Characteristic Curves



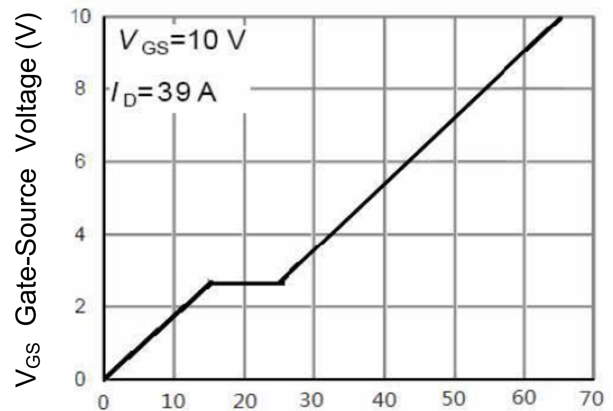
V_{DS} Drain-Source Voltage (V)



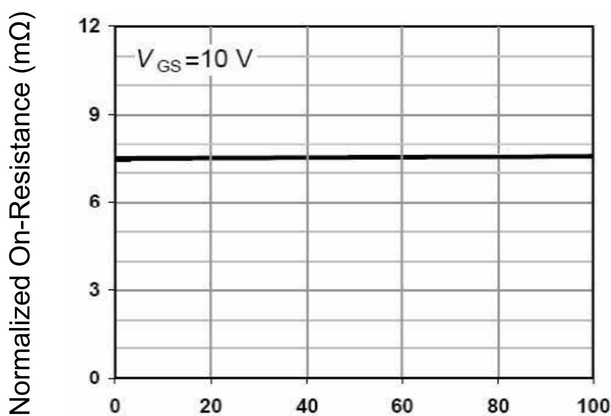
T_J Junction Temperature (℃)



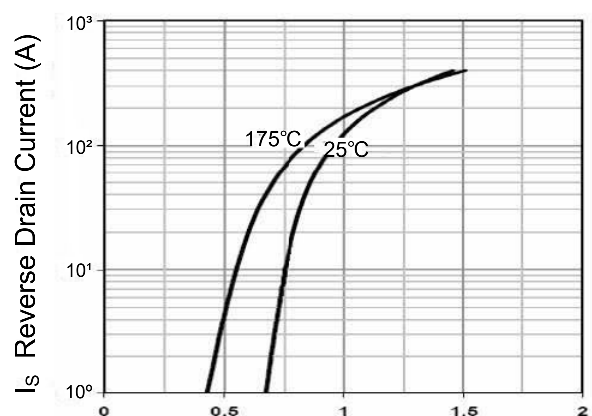
V_{GS} Gate-Source Voltage (V)



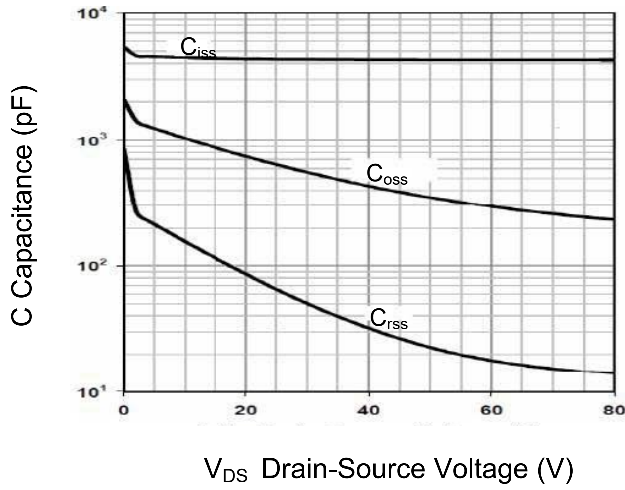
Q_g Gate Charge (nC)



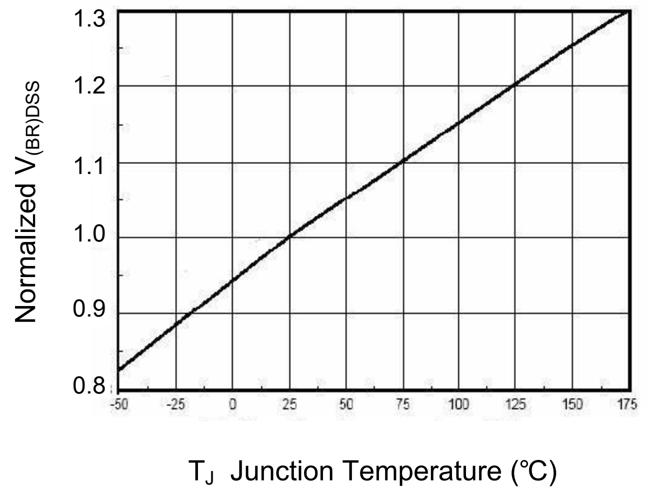
I_D Drain Current (A)



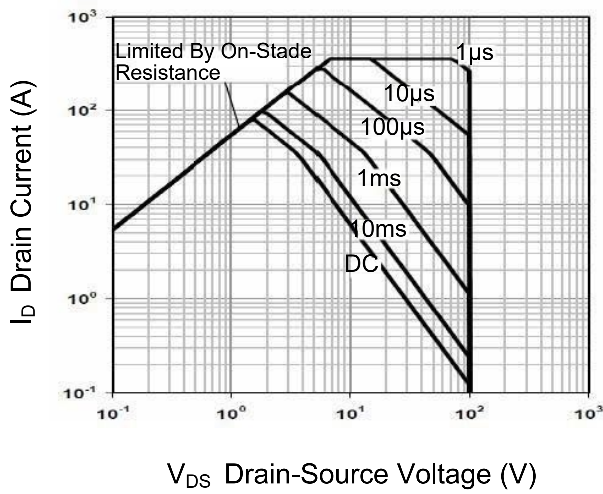
V_{SD} Source-Drain Voltage (V)



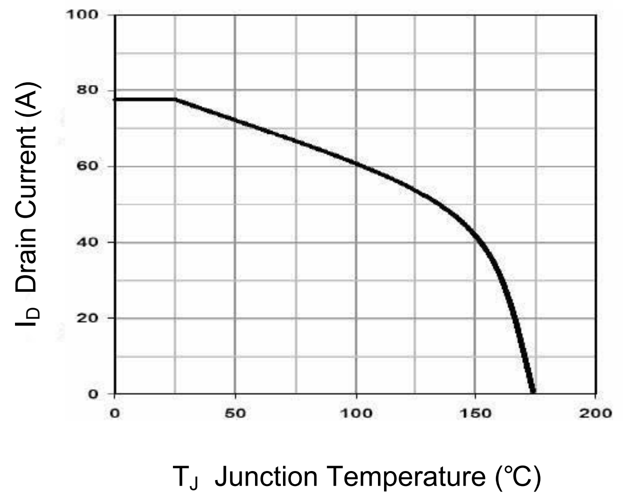
V_{DS} Drain-Source Voltage (V)



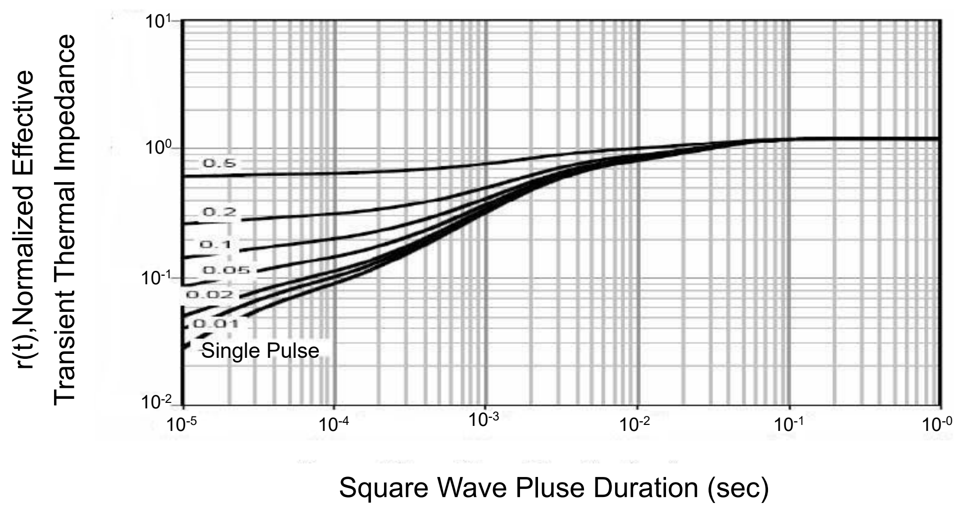
T_J Junction Temperature (℃)



V_{DS} Drain-Source Voltage (V)



T_J Junction Temperature (℃)



Square Wave Pluse Duration (sec)

Package Outline

TO-252
Dimensions in mm