



PJM6025NTD

Silicon N-Channel Power MOSFET

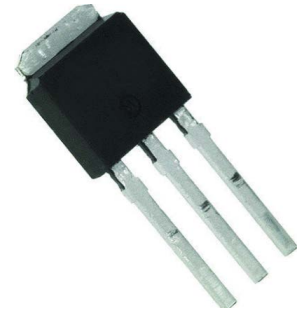
Features

- Advanced Trench Technology
- $R_{DS(on)} < 30m\Omega$ @ $V_{GS}=10V$ (Typ. $25m\Omega$)
- Fast Switching
- Low Reverse Transfer Capacitances
- Low Gate Charge

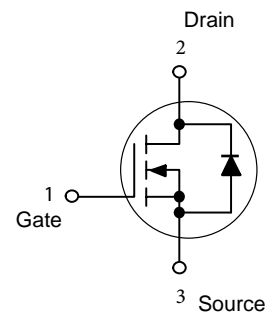
Applications

- Power Switching Application
- Hard Switched and High Frequency Circuits
- Uninterruptible Power Supply

TO-251



Schematic diagram



Absolute Maximum Ratings

Ratings at $T_C = 25^\circ C$ unless otherwise specified.

Parameter	Symbol	Value	Units
Drain-to-Source Voltage	V_{DS}	60	V
Continuous Drain Current	I_D	25	A
		$T_C = 100^\circ C$	
Pulsed Drain Current	I_{DM}	80	A
Gate-to-Source Voltage	V_{GS}	± 20	V
Peak Diode Recovery ^{Note 1}	dv/dt	5.0	V/ns
Single Pulse Avalanche Energy ^{Note 2}	E_{AS}	72	mJ
Repetitive Avalanche Energy ^{Note 3}	E_{AR}	18	mJ
Avalanche Current	I_{AR}	11	A
Power Dissipation	P_D	50	W
Operating Junction Temperature	T_J	175	$^\circ C$
Storage Temperature Range	T_{STG}	-55 to 175	$^\circ C$

Note:1. $I_{SD} = 10A, di/dt \leq 100A/us, V_{DD} \leq BV_{DS}, Start T_J = 25^\circ C..$

2. EAS condition: $T_J = 25^\circ C, V_{DD} = 30V, V_G = 10V, L = 0.5mH, R_g = 25\Omega.$

3. Repetitive rating; pulse width limited by maximum junction temperature.



PJM6025NTD

Silicon N-Channel Power MOSFET

Thermal Characteristics

Parameter	Symbol	Value	Units
Thermal Resistance, Junction-to-Case ^{Note 1}	$R_{\theta JC}$	3.0	$^{\circ}C/W$

Electrical Characteristics

Ratings at $T_C = 25^{\circ}C$ unless otherwise specified.

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Static Characteristics							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60	-	-	V	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	-	3.0	V	
Gate Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	± 1	μA	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$	$T_A = 25^{\circ}C$	-	-	1.0	μA
		$V_{DS} = 48V, V_{GS} = 0V$	$T_A = 125^{\circ}C$	-	-	250	
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$	-	25	30	m Ω	
Dynamic Characteristics							
Total Gate Charge	Q_g	$V_{DD} = 30V, V_{GS} = 10V,$ $I_D = 4.5A,$	-	11	-	nC	
Gate-Source Charge	Q_{gs}		-	6	-		
Gate-Drain Charge	Q_{gd}		-	3	-		
Input Capacitance	C_{iss}	$V_{DS} = 30V, V_{GS} = 0V,$ $f = 1MHz$	-	500	-	pF	
Output Capacitance	C_{oss}		-	60	-		
Reverse Transfer Capacitance	C_{rss}		-	25	-		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 30V, R_g = 3.0 \Omega,$ $V_{GS} = 10V, I_D = 2A,$	-	6	-	ns	
Turn-On Rise Time	t_r		-	2.8	-		
Turn-Off Delay Time	$t_{d(off)}$		-	9	-		
Turn-Off Fall Time	t_f		-	5	-		
Forward Transconductance	g_{fs}	$V_{DS} = 5V, I_D = 5A$	11	-	-	S	
Source-Drain Diode Characteristics							
Diode Forward Current	I_{SD}		-	-	25	A	
Diode Forward Voltage	V_{SD}	$I_S = 25A, V_{GS} = 0V$	-	-	1.5	V	
Reverse Recovery Time	t_{rr}	$I_S = 25A, T_J = 25^{\circ}C$ $dI_F/dt = 100A/\mu s, V_{GS} = 0V$	-	35	-	ns	
Reverse Recovery Charge	Q_{rr}		-	50	-	μC	



Electrical Characteristics Curves

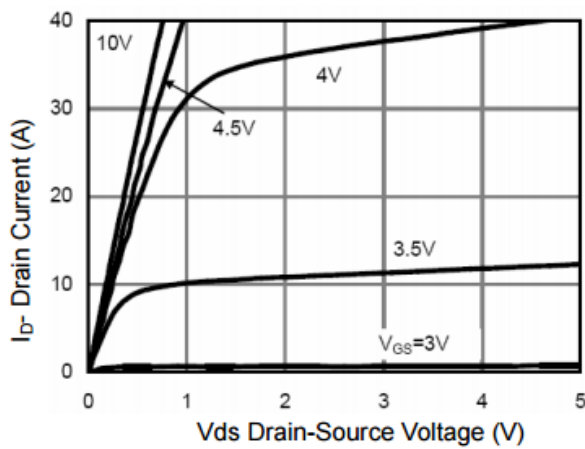


Figure 1 Output Characteristics

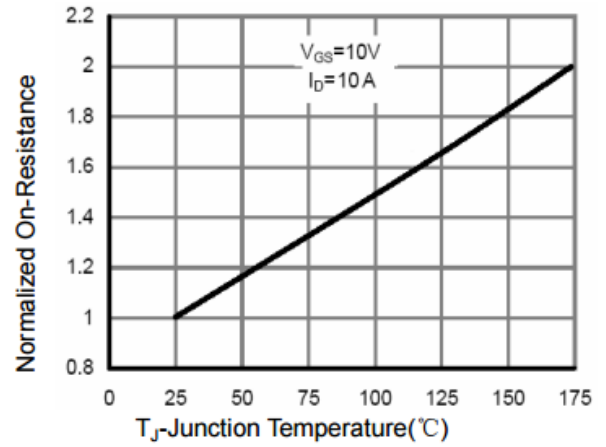


Figure 4 Rdson-Junction Temperature

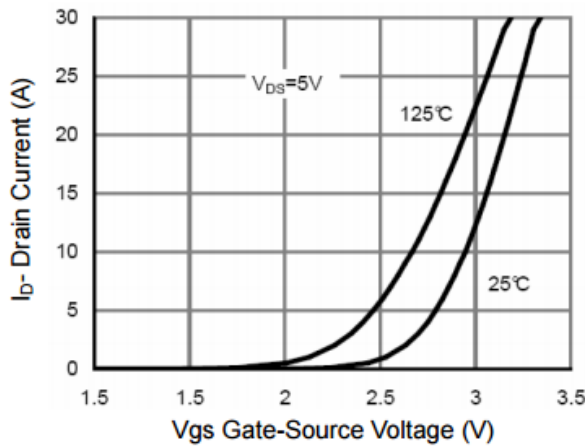


Figure 2 Transfer Characteristics

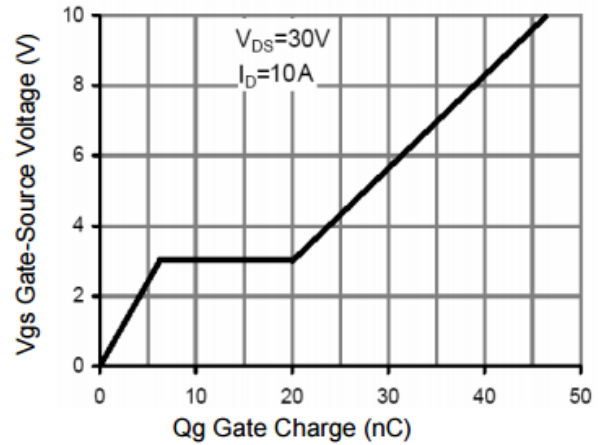


Figure 5 Gate Charge

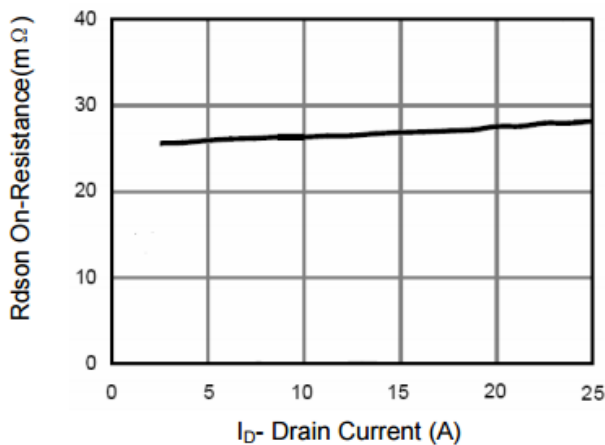


Figure 3 Rdson- Drain Current

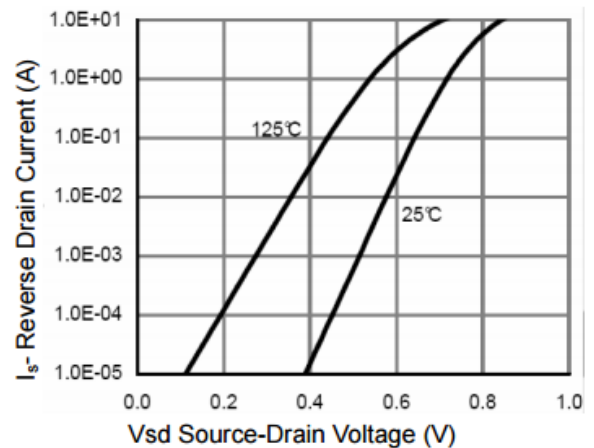


Figure 6 Source- Drain Diode Forward

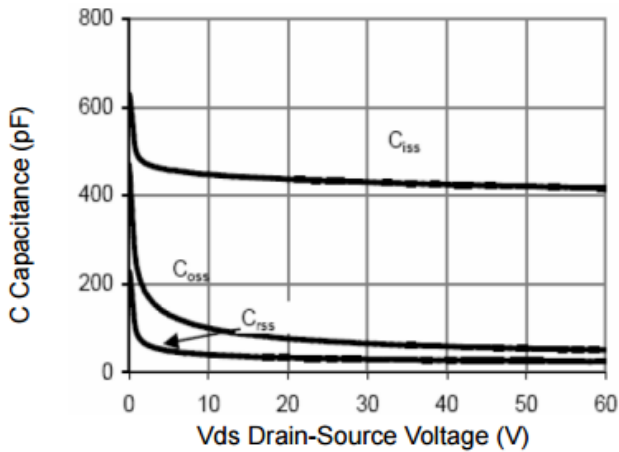


Figure 7 Capacitance vs Vds

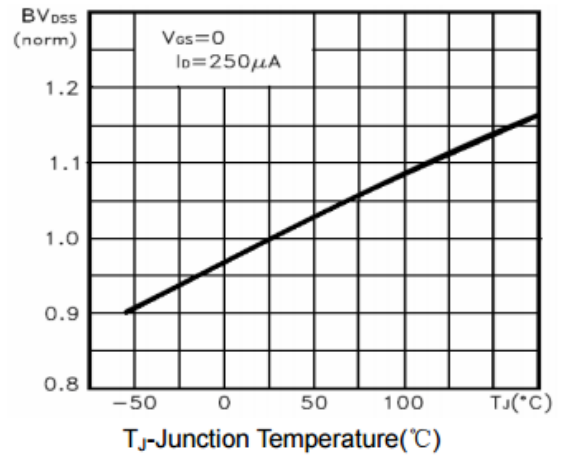


Figure 9 BV_{DSS} vs Junction Temperature

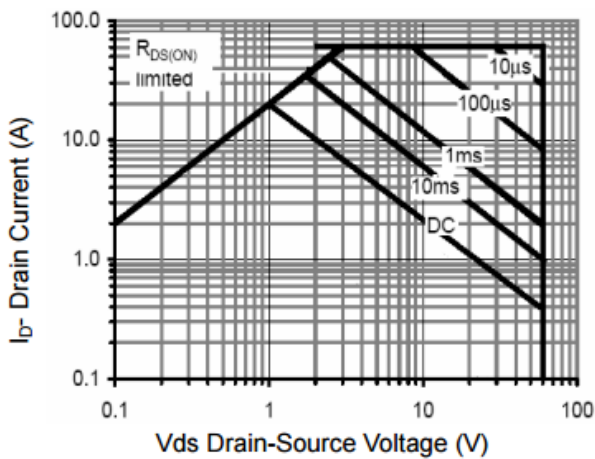


Figure 8 Safe Operation Area

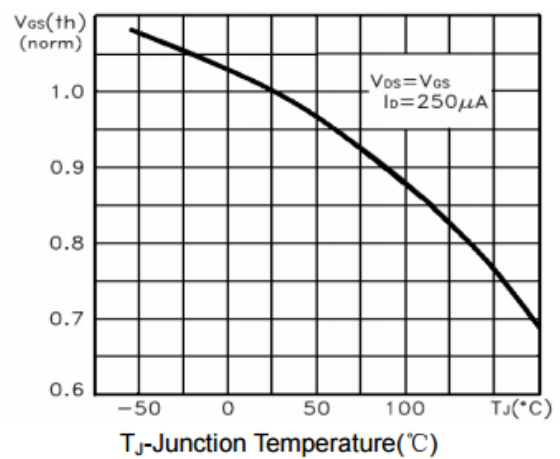
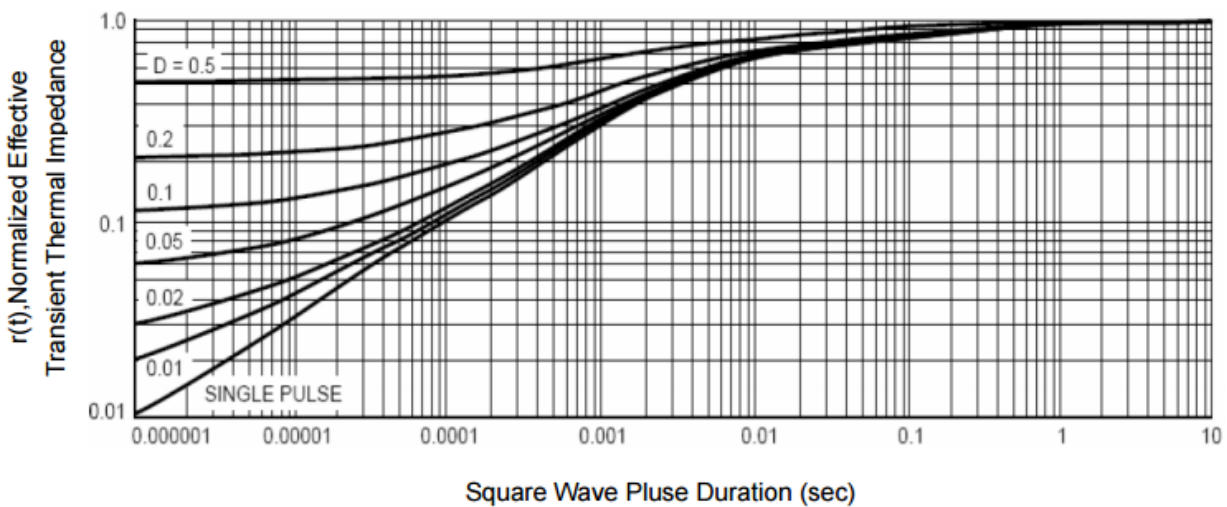


Figure 10 $V_{GS(th)}$ vs Junction Temperature



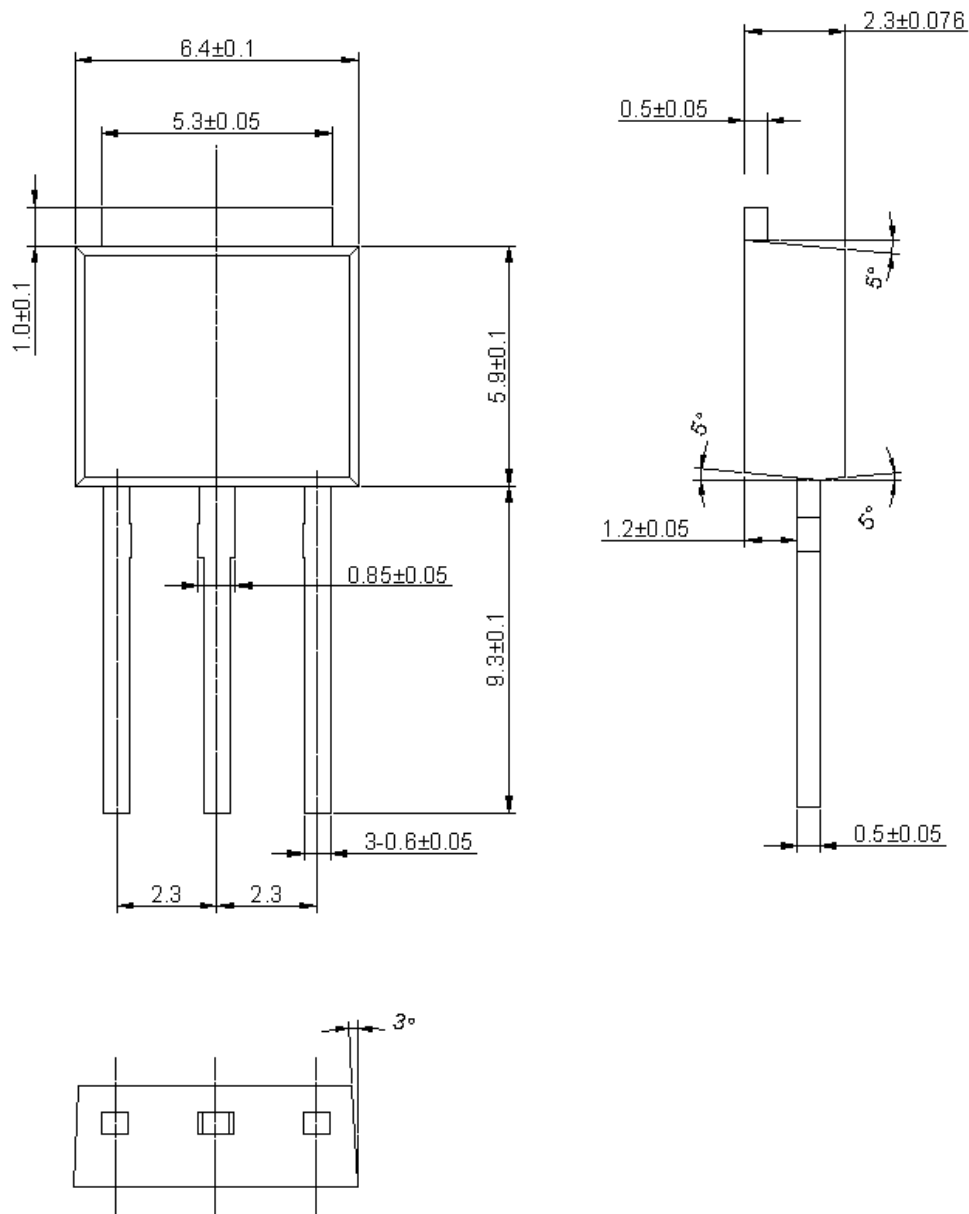


PJM6025NTD

Silicon N-Channel Power MOSFET

Package Outline

TO-251



Ordering Information

Device	Package	Shipping
PJM6025NTD	TO-251	3,000PCS