



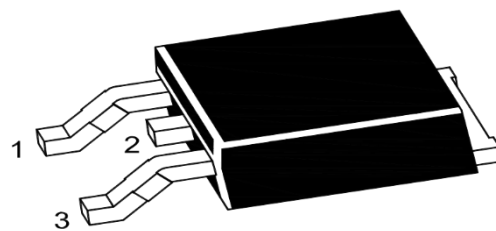
PJM80H04NTE

N-Channel Power MOSFET

Descriptions

- Fast Switching
- Low $R_{DS(ON)}$ and Gate Charge
- Low Reverse Transfer Capacitance
- 100% Single Pulse Avalanche Energy Test

TO-252



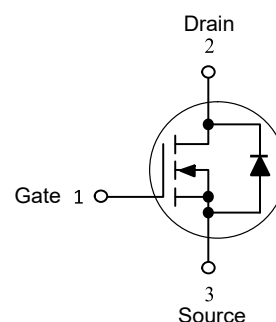
Features

- $V_{DS} = 800V$, $I_D = 4A$
- $R_{DS(ON)} < 3.6 \Omega$ (@ $V_{GS}=10V$)
- ESD Protected $> 4kV$ (HBM)
- MSL: 1 Level

Applications

- Power Switch
- Adaptor, Charger

Schematic Diagram



Absolute Maximum Ratings

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

Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V_{DS}	800	V
Gate-Source Voltage		V_{GS}	± 30	V
Continuous Drain Current	$T_C = 25^\circ C$	I_D	4	A
	$T_C = 100^\circ C$		2.5	
Pulsed Drain Current ¹		I_{DM}	16	
Single Pulse Avalanche Energy ²		E_{AS}	650	mJ
Power Dissipation		P_D	85	W
Junction and Storage Temperature Range		T_J, T_{STG}	150, -55 to 150	$^\circ C$
Thermal Characteristics				
Parameter		Symbol	Typ.	Units
Maximum Junction-to-Ambient		$R_{\theta JA}$	75	$^\circ C/W$
Maximum Junction-to-Case		$R_{\theta JC}$	1.47	$^\circ C/W$



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Electrical Characteristics (T_c = 25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Static Parameters						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250μA, V _{GS} =0V	800	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =800V, V _{GS} =0V T _A =25℃	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±30V	--	--	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	--	4	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =2.0A	--	3.0	3.6	Ω
Dynamic Parameters						
Forward Transconductance	g _{FS}	V _{DS} =15V, I _D =4.0A	--	5.5	--	S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1MHz	--	490	--	pF
Output Capacitance	C _{oss}		--	50	--	pF
Reverse Transfer Capacitance	C _{rss}		--	25	--	pF
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DD} =400V, I _D =4A	--	16	--	nC
Gate Source Charge	Q _{gs}		--	3.0	--	nC
Gate Drain Charge	Q _{gd}		--	6.0	--	nC
Turn-On DelayTime	t _{D(on)}	V _{GS} =10V, V _{DD} =400V, I _D =4A R _g =12Ω	--	10	--	ns
Turn-On Rise Time	t _r		--	10	--	ns
Turn-Off DelayTime	t _{D(off)}		--	30	--	ns
Turn-Off Fall Time	t _f		--	15	--	ns
Body Diode Reverse Recovery Time	t _{rr}	I _F =4A, V _{GS} =0, T _J =25℃ di/dt=100A/μs	--	135	--	ns
Body Diode Reverse Recovery Charge	Q _{rr}		--	446	--	μC
Body Diode Forward Voltage	V _{SD}	I _F =4A, V _{GS} =0V	--	--	1.5	V
Body Diode Continuous Source Current	I _{SD}		--	--	4.0	A
Body Diode Maximum Pulse Current	I _{SM}		--	--	16	A

Notes: 1. Repetitive rating; Pulse width limited by maximum junction temperature;
2. L=10.0mH, I_D=4.0A, start T_J=25°C



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Electrical Characteristics Curves

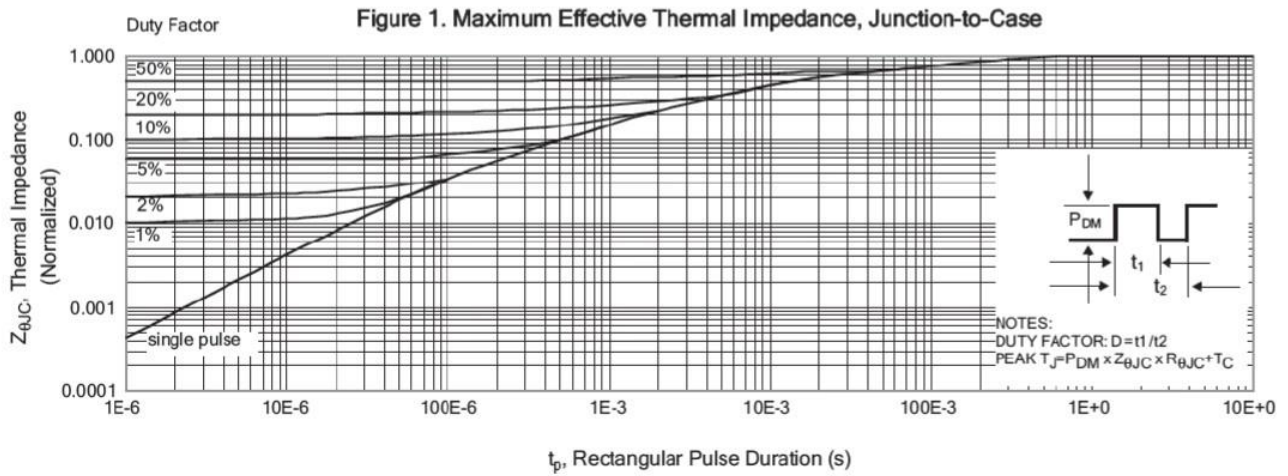


Figure 2. Maximum Power Dissipation vs Case Temperature

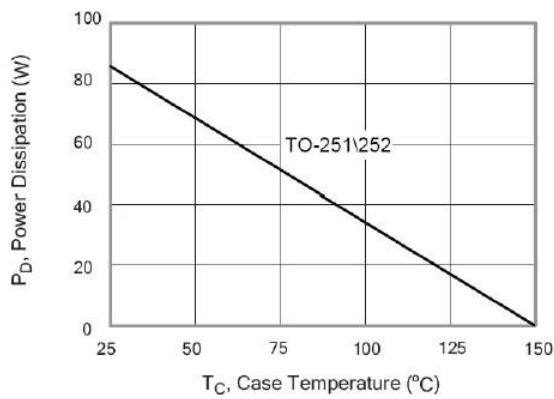


Figure 4. Typical Output Characteristics

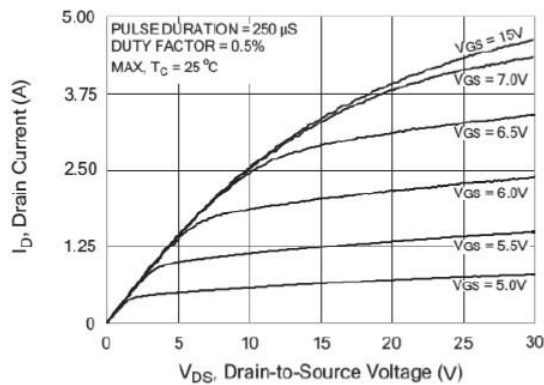


Figure 3. Maximum Continuous Drain Current vs Case Temperature

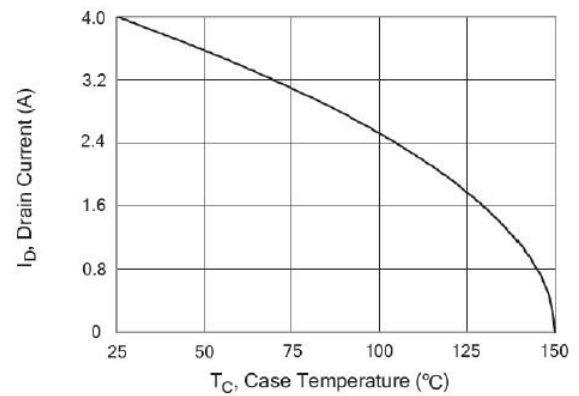
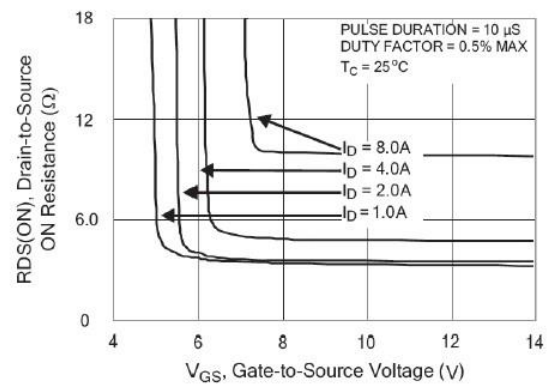


Figure 5. Typical Drain-to-Source ON Resistance vs Gate Voltage and Drain Current





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Figure 6. Maximum Peak Current Capability

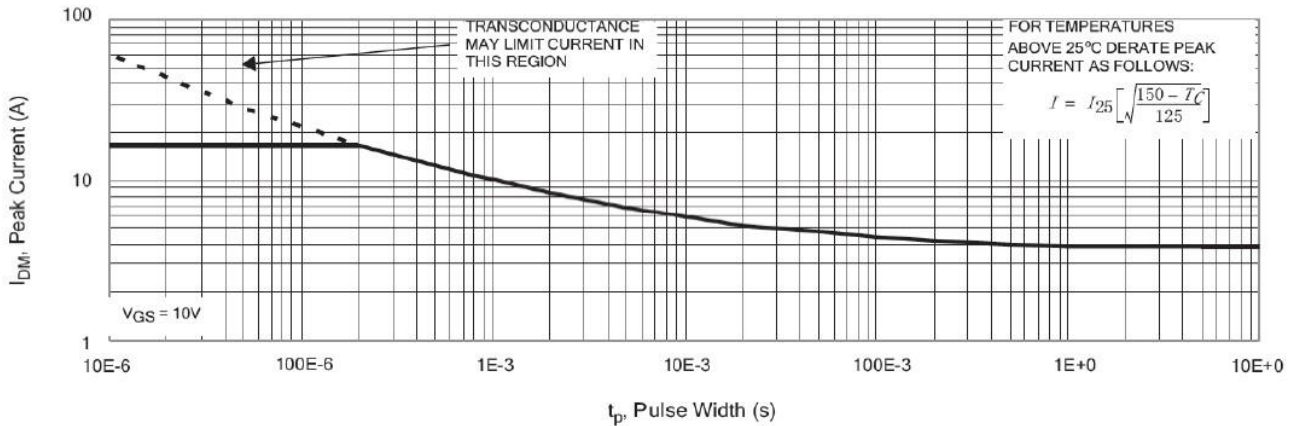


Figure 7. Typical Transfer Characteristics

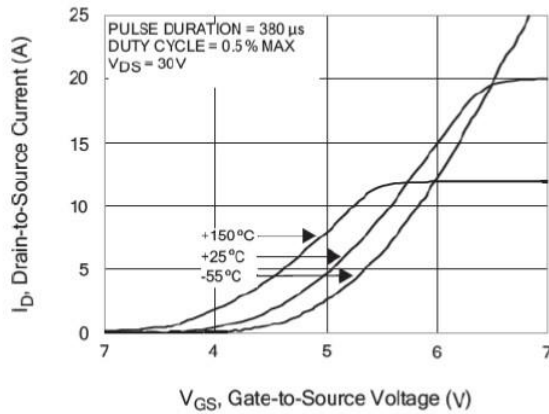


Figure 8. Unclamped Inductive Switching Capability

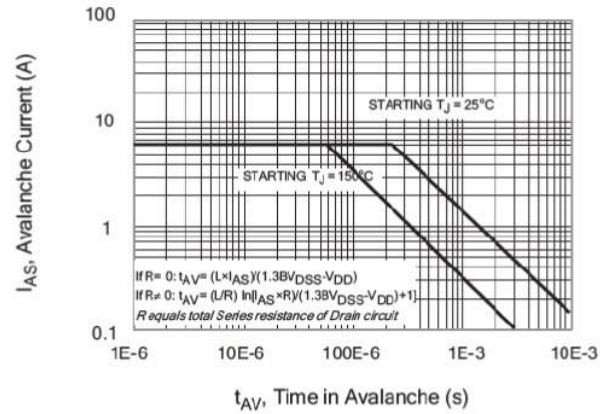


Figure 9. Typical Drain-to-Source ON Resistance vs Drain Current

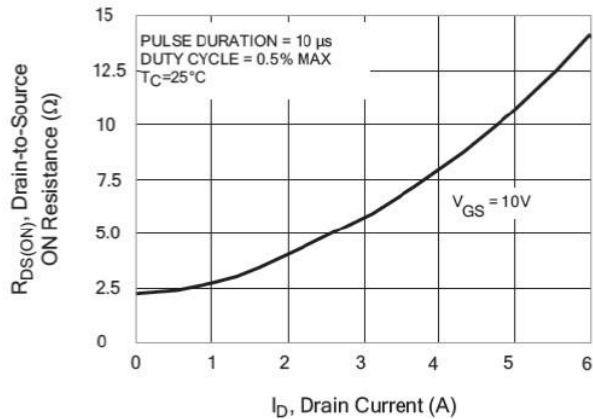
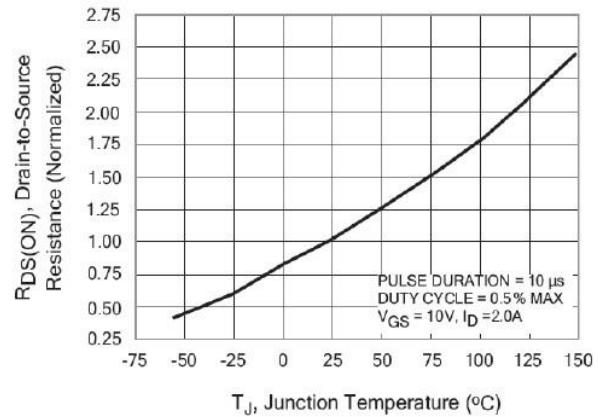


Figure 10. Typical Drain-to-Source ON Resistance vs Junction Temperature





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Figure 11. Typical Breakdown Voltage vs Junction Temperature

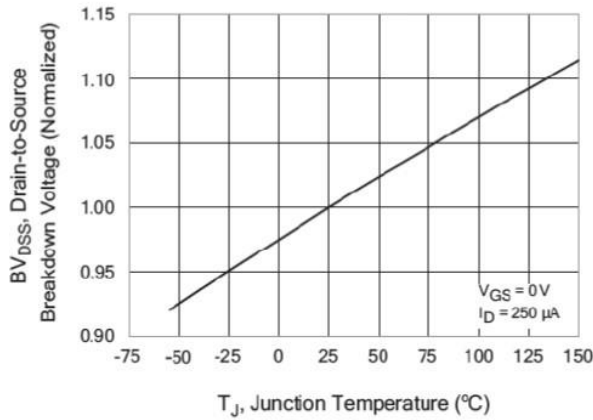


Figure 12. Typical Threshold Voltage vs Junction Temperature

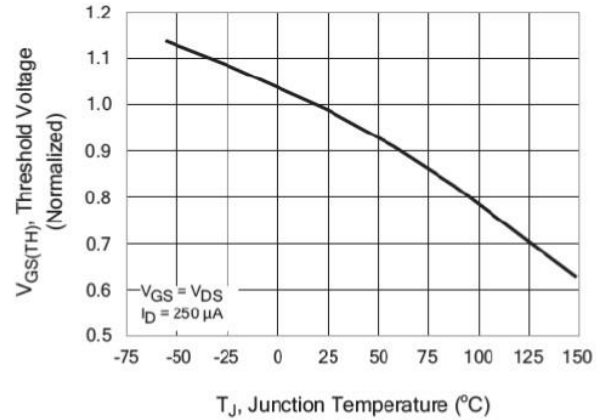


Figure 13. Maximum Forward Bias Safe Operating Area

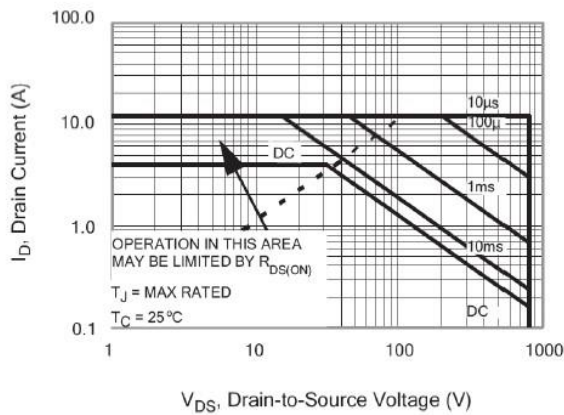


Figure 14. Typical Capacitance vs Drain-to-Source Voltage

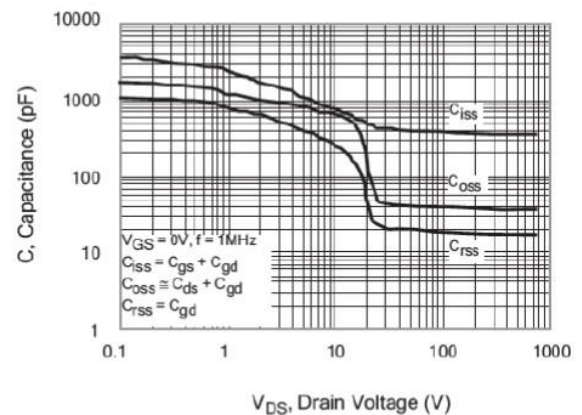


Figure 15. Typical Gate Charge vs Gate-to-Source Voltage

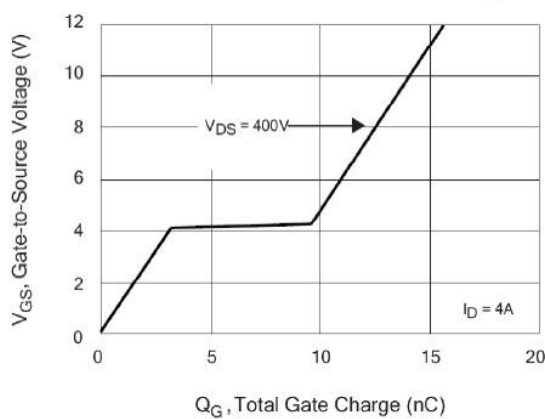
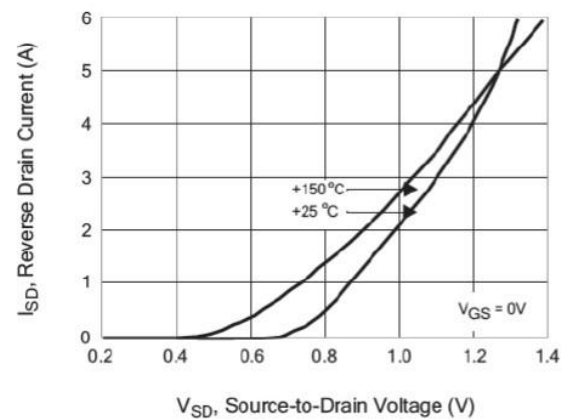


Figure 16. Typical Body Diode Transfer Characteristics





Unit: mm

