



PJM90H09NTF

N-Channel Enhancement Mode Power MOSFET

Product Summary

- $V_{DS} = 900V, I_D = 9A$
- $R_{DS(on)} < 1.4\Omega @ V_{GS} = 10V$

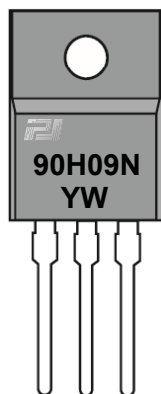
Features

- Advanced Planar Technology
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

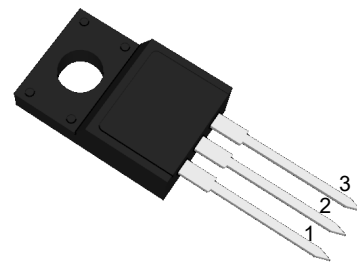
Application

- Load Switch
- PWM Application

Marking Code



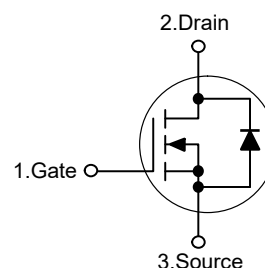
TO-220F



(Top View)

Pin	Description
1	Gate
2	Drain
3	Source

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C case temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	900	V
Gate-Source Voltage	V_{GS}	± 30	V
Drain Current-Continuous	I_D	9	A
Drain Current-Pulsed ^{Note1}	I_{DM}	36	A
Single Pulse Avalanche Energy ^{Note2}	E_{AS}	756	mJ
Maximum Power Dissipation	P_D	68	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.84	°C/W
--------------------------------------	-----------------	------	------



PJM90H09NTF

N-Channel Enhancement Mode Power MOSFET

Electrical Characteristics

(T_J=25°C 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	900	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =900V, V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±30V, V _{DS} =0V	--	--	±100	nA
Gate Threshold Voltage ^{Note3}	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	3	4	V
Drain-Source On-Resistance ^{Note3}	R _{DS(on)}	V _{GS} =10V, I _D =4.5A	--	1.1	1.4	Ω
Forward Transconductance ^{Note3}	g _{FS}	V _{DS} =5V, I _D =3A	--	5.3	--	S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz	--	1720	--	pF
Output Capacitance	C _{oss}		--	171	--	pF
Reverse Transfer Capacitance	C _{rss}		--	16	--	pF
Total Gate Charge	Q _g	V _{DS} =720V, I _D =9A, V _{GS} =10V	--	38	--	nC
Gate-Source Charge	Q _{gs}		--	11	--	nC
Gate-Drain Charge	Q _{gd}		--	13	--	nC
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =450V, I _D =9A, V _{GS} =10V, R _{GEN} =25Ω	--	28	--	nS
Turn-on Rise Time	t _r		--	40	--	nS
Turn-off Delay Time	t _{d(off)}		--	111	--	nS
Turn-off Fall Time	t _f		--	48	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =9A	--	--	1.5	V
Diode Forward Current	I _S		--	--	9	A

Note:

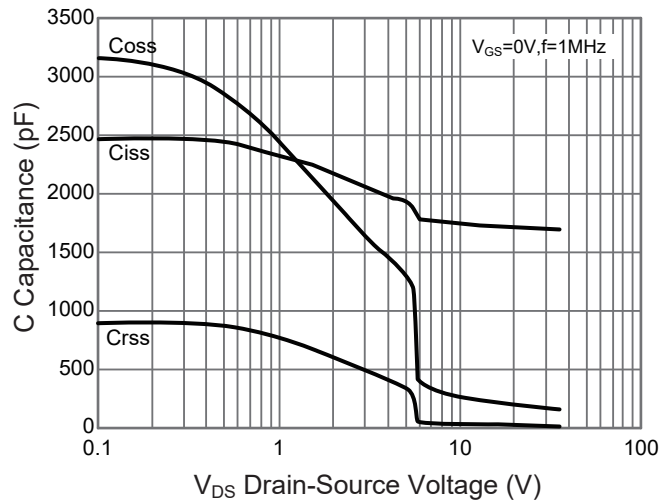
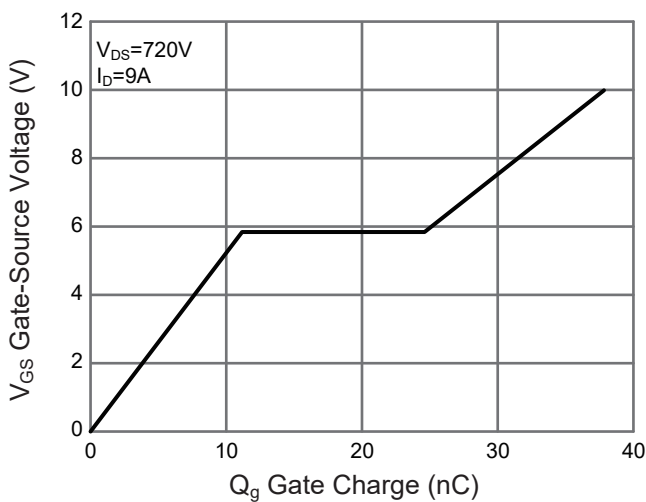
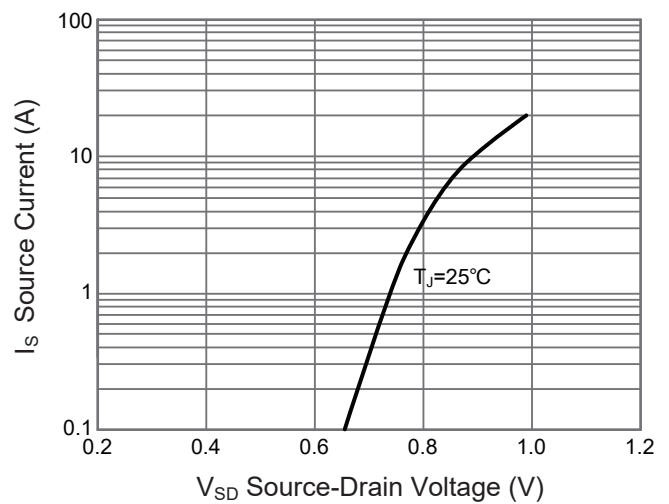
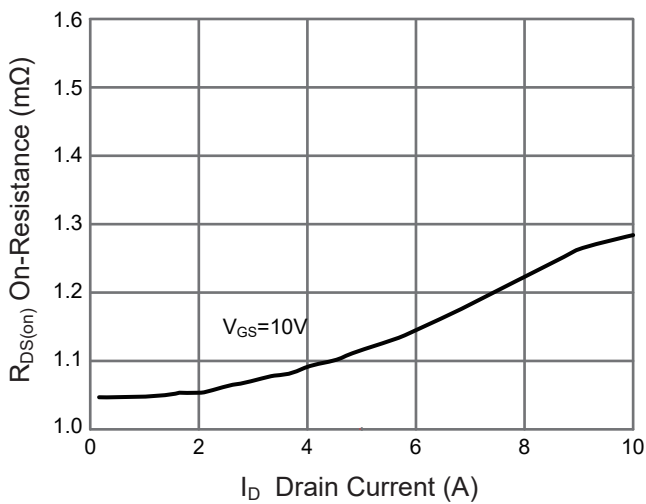
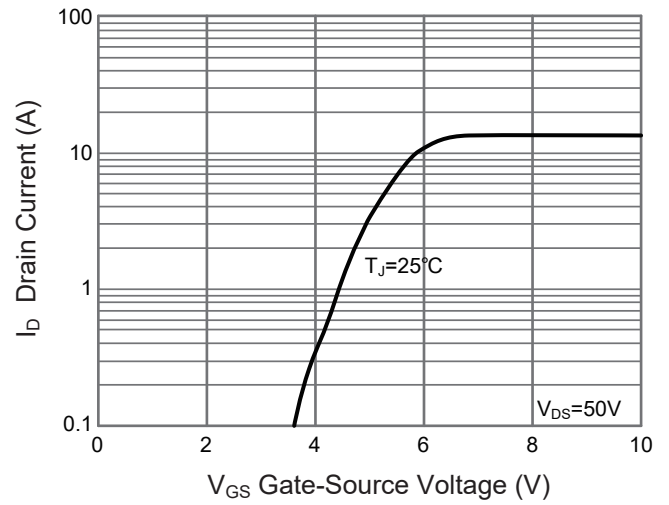
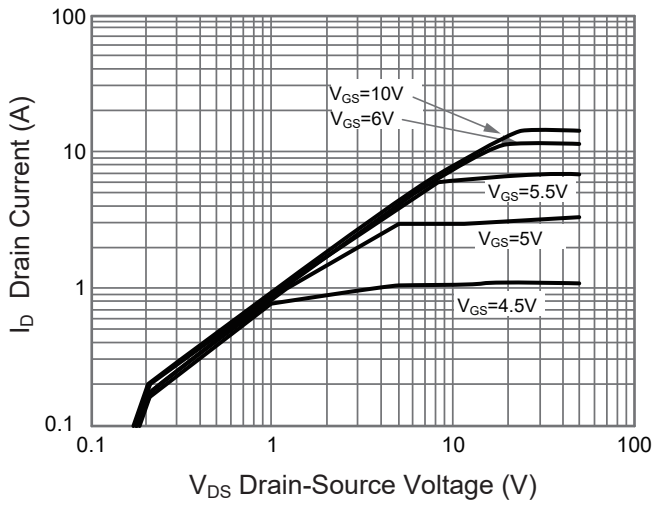
1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. EAS condition: T_J=25°C, V_{DD}=50V, V_G=10V, R_G=25Ω, L=30mH, I_{AS}=7.1A
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%



PJM90H09NTF

N-Channel Enhancement Mode Power MOSFET

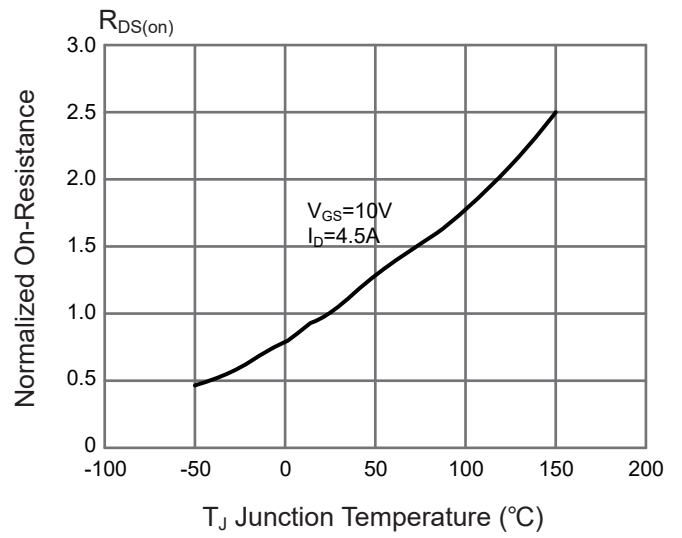
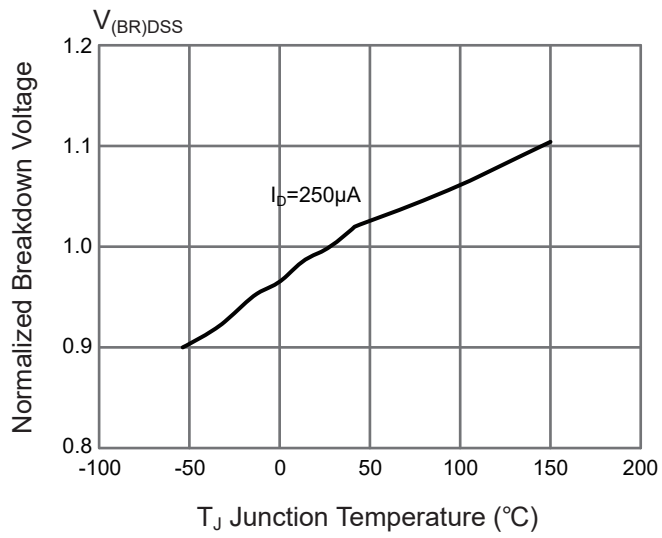
Typical Characteristic Curves





PJM90H09NTF

N-Channel Enhancement Mode Power MOSFET





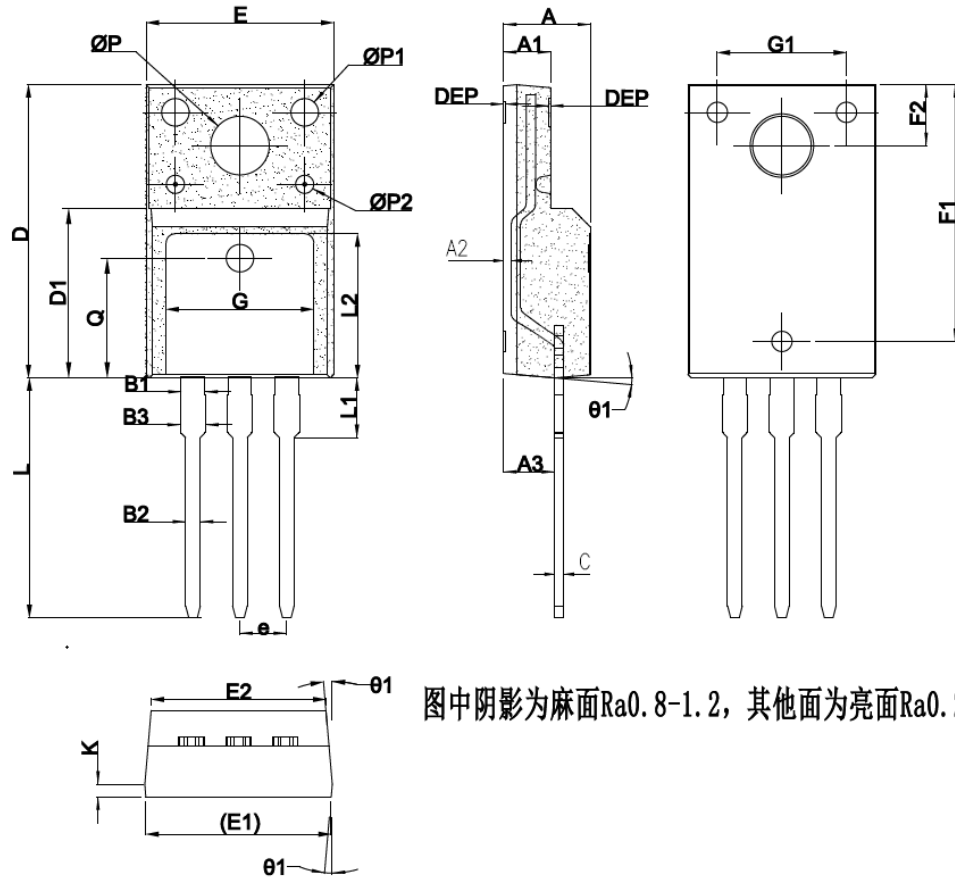
PJM90H09NTF

N-Channel Enhancement Mode Power MOSFET

Package Outline

TO-220F

Dimensions in mm



图中阴影为麻面Ra0.8-1.2, 其他面为亮面Ra0.2-0.4

Symbol	mm		
	Min.	Nom.	Max.
*A	4.50	4.70	4.90
*A1	2.34	2.54	2.74
*A2	0.38	0.43	0.48
*A3	2.66	2.76	2.86
B1	1.23	1.28	1.33
*B2	0.75	0.80	0.85
*B3	1.28	-	1.43
*C	0.45	0.50	0.60
*D	15.67	15.87	16.07
*D1	9.04	9.12	9.20
*e	2.49	2.54	2.59
*E	10.00	10.16	10.32
E1	9.94	10.04	10.14
E2	9.36	9.46	9.56
F1	13.80	13.90	14.00
*F2	3.20	3.30	3.40
G	7.80	8.00	8.20
G1	6.90	7.00	7.10
K	0.65	0.70	0.75
*L	12.78	12.98	13.18
*L1	3.13	3.23	3.33
L2	7.70	7.80	7.90
Q	6.5REF		
*ØP	3.08	-	3.48
ØP1	1.40	1.50	1.60
ØP2	0.95	1.00	1.05
*Ø1	3°	5°	7°
DEP	0.05	0.10	0.15
带*为检验尺寸			

Ordering Information

Device	Package	Shipping
PJM90H09NTF	TO-220F	1,000PCS/Box