



PJF8N65M

650V N-Channel Enhancement Mode MOSFET

Voltage 650V **Current** 7.5 A

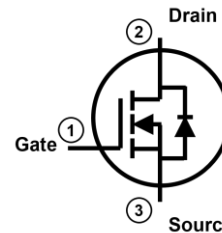
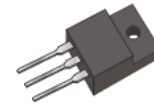
Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_D@3.5A < 1.2\Omega$
- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: ITO-220AB-F Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- ITO-220AB-F Approx. Weight : 0.068 ounces, 2 grams

ITO-220AB-F



Maximum Ratings and Thermal Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	650	V
Gate-Source Voltage		V_{GS}	± 30	
Continuous Drain Current (Note 3,4)	$T_C=25^\circ\text{C}$	I_D	7.5	A
Pulsed Drain Current (Note 1,3)	$T_C=25^\circ\text{C}$	I_{DM}	30	
Single Pulse Avalanche Energy (Note 6)		E_{AS}	5.3	mJ
Power Dissipation	$T_C=25^\circ\text{C}$	P_D	34.7	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	$^\circ\text{C}$
Typical Thermal Resistance (Note 5)	Junction to Case	$R_{\theta JC}$	3.6	$^\circ\text{C/W}$
	Junction to Ambient	$R_{\theta JA}$	120	



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Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	650	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	2	2.9	4	
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =3.5A	-	0.9	1.2	Ω
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =650V, V _{GS} =0V	-	-	1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±30V, V _{DS} =0V	-	-	±100	nA
Dynamic (Note 7)						
Total Gate Charge	Q _g	V _{DS} =520V, I _D =3.5A, V _{GS} =10V (Note 2,3)	-	29	-	nC
Gate-Source Charge	Q _{gs}		-	5	-	
Gate-Drain Charge	Q _{gd}		-	10	-	
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1.0MHZ	-	1268	-	pF
Output Capacitance	C _{oss}		-	75	-	
Reverse Transfer Capacitance	C _{rss}		-	35	-	
Gate resistance	R _g	f=1.0MHZ	-	1.9	-	Ω
Turn-On Delay Time	t _{d(on)}	V _{DD} =520V, I _D =3.5A, V _{GS} =10V, R _G =3Ω (Note 2,3)	-	19	-	ns
Turn-On Rise Time	t _r		-	25	-	
Turn-Off Delay Time	t _{d(off)}		-	55	-	
Turn-Off Fall Time	t _f		-	28	-	
Drain-Source Diode						
Diode Forward Current	I _S	---	-	-	7.5	A
Diode Forward Voltage	V _{SD}	I _S =7.5A, V _{GS} =0V	-	0.84	1.4	V
Reverse Recovery Time	T _{rr}	V _{GS} =0V, I _S =3.5A	-	246	-	ns
Reverse Recovery Charge	Q _{rr}	dI _S /dt=100A/us (Note 2,3)	-	1.8	-	uC

NOTES :

1. Pulse width ≤ 300us, Duty cycle ≤ 2%.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature T_{J(MAX)}=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J=25°C.
4. The maximum current rating is package limited.
5. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. Mounted on a 1 inch² with 2oz. square pad of copper.
6. The test condition is L=1mH, I_{AS}=3.3A, R_G=25 ohm, Starting T_J=25°C.
7. Guaranteed by design, not subject to production testing.



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TYPICAL CHARACTERISTIC CURVES

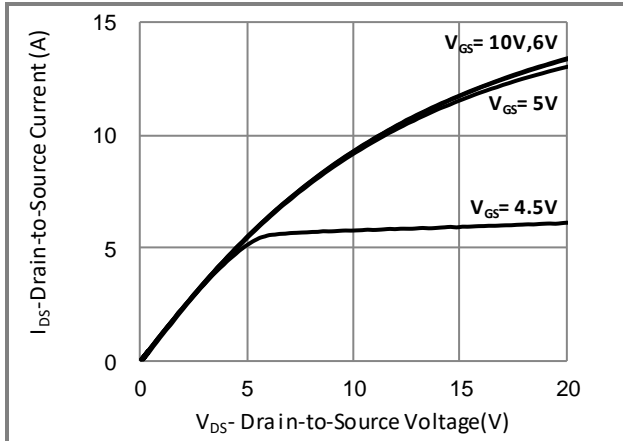


Fig.1 Output Characteristics

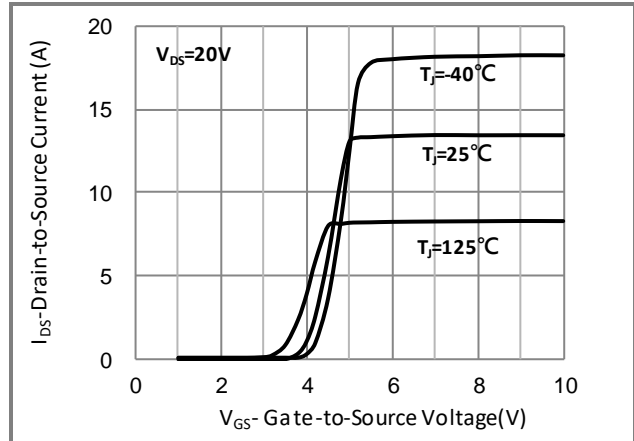


Fig.2 Transfer Characteristics

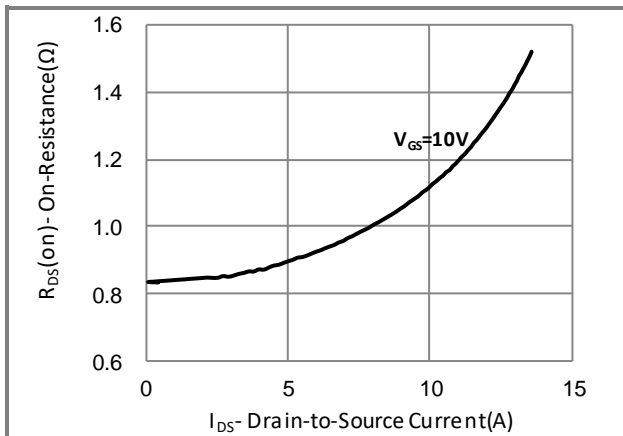


Fig.3 On-Resistance vs. Drain Current

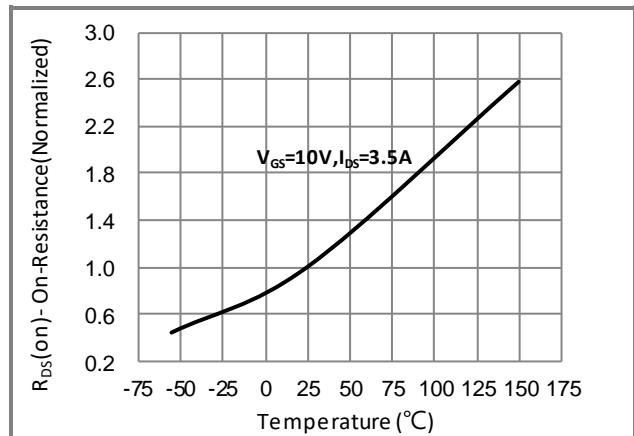


Fig.4 On-Resistance vs. Junction temperature

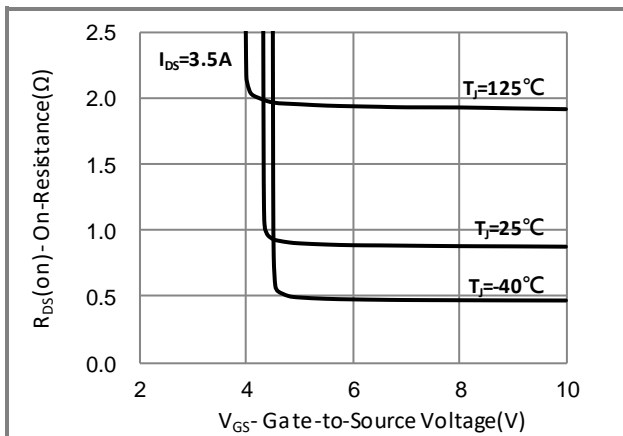


Fig.5 On-Resistance Variation with V_{GS}

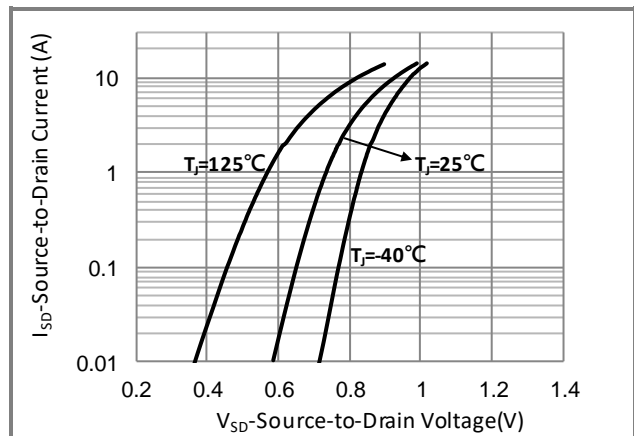


Fig.6 Source-Drain Diode Forward Voltage



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TYPICAL CHARACTERISTIC CURVES

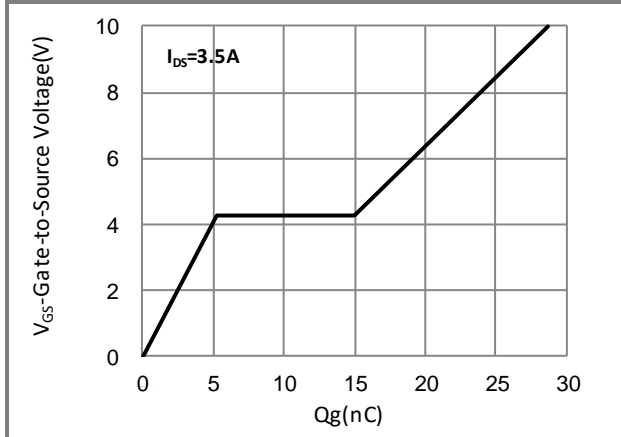


Fig.7 Gate-Charge Characteristics

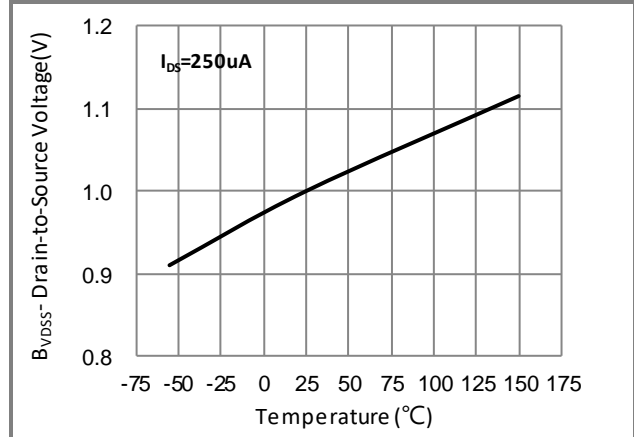


Fig.8 Breakdown Voltage Variation vs. Temperature

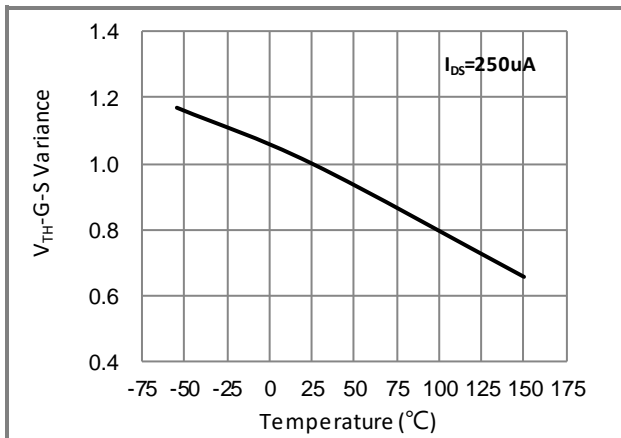


Fig.9 Threshold Voltage Variation with Temperature

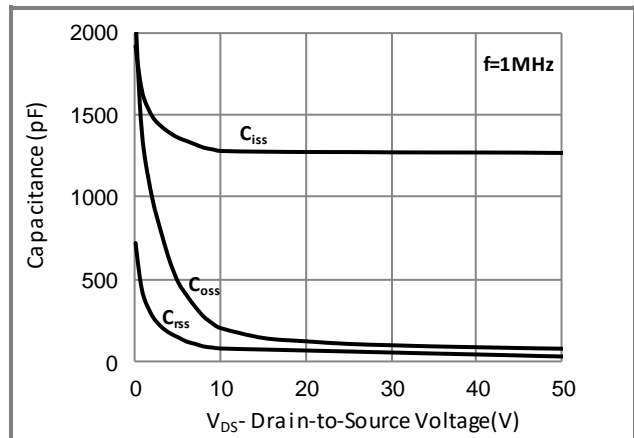


Fig.10 Capacitance vs. Drain-Source Voltage

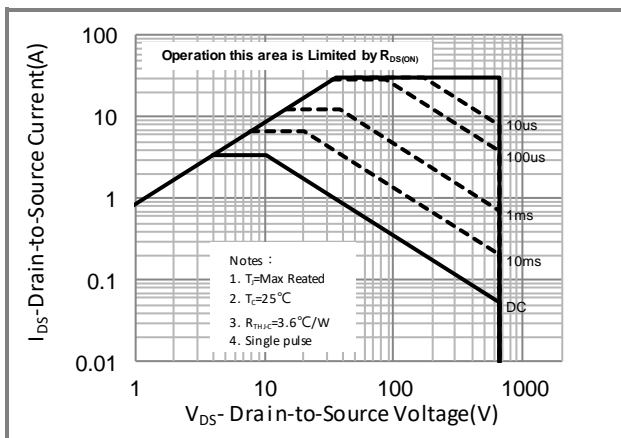


Fig.11 Maximum Safe Operating Area

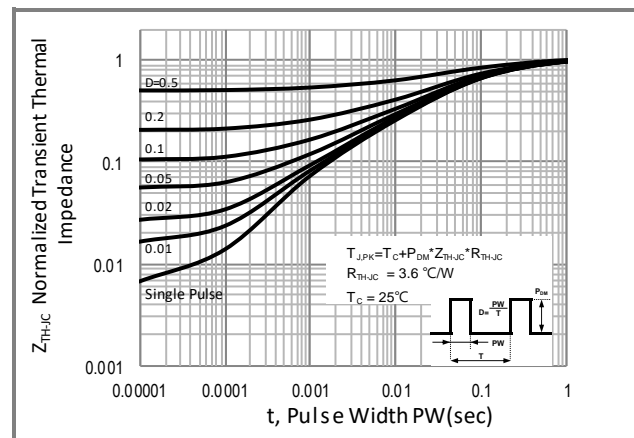


Fig.12 Normalized Transient Thermal Impedance

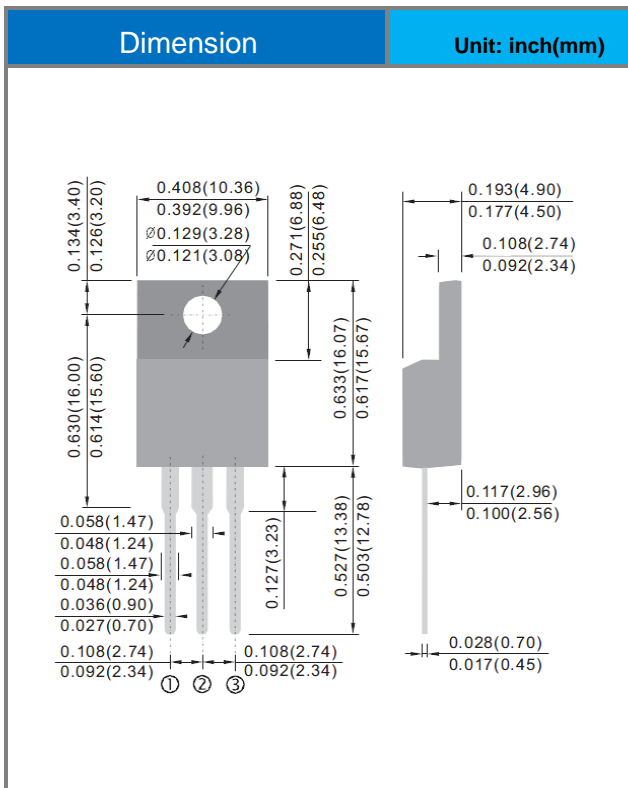


PJF8N65M

Part No Packing Code Version

Part No	Package Type	Packing Type	Marking	Version
PJF8N65M	ITO-220AB-F	50pcs / Tube	F8N65M	Halogen free

Packaging Information





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