

PJQ4848P-AU

40V Dual N-Channel Enhancement Mode MOSFET

Voltage 40 V **Current** 37 A

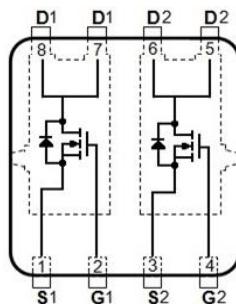
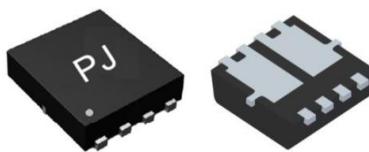
Features

- $R_{DS(ON)}$, $V_{GS} @ 10V$, $I_D @ 8A < 15m\Omega$
- $R_{DS(ON)}$, $V_{GS} @ 4.5V$, $I_D @ 6A < 20m\Omega$
- Advanced Trench Process Technology
- High density cell design for ultralow on-resistance
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: DFN3333B-8L Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.001 ounces, 0.027 grams

DFN3333B-8L



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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage	V_{DS}	V_{GS}	40	V
			± 20	
Continuous Drain Current	$T_C=25^\circ C$	I_D	37	A
	$T_C=100^\circ C$		23	
Pulsed Drain Current ^(Note 1)	$T_C=25^\circ C$	I_{DM}	120	
Power Dissipation	$T_C=25^\circ C$	P_D	39.6	W
	$T_C=100^\circ C$		19.8	
Continuous Drain Current	$T_A=25^\circ C$	I_D	9	A
	$T_A=70^\circ C$		7	
Power Dissipation	$T_A=25^\circ C$	P_D	2.4	W
	$T_A=70^\circ C$		1.6	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~175	$^\circ C$
Typical Thermal Resistance ^(Note 4,5)	Junction to Case	$R_{\theta JC}$	3.79	$^\circ C/W$
	Junction to Ambient	$R_{\theta JA}$	62.5	

- Limited only By Maximum Junction Temperature

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Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{\text{GS}}=0\text{V}, I_{\text{D}}=250\mu\text{A}$	40	-	-	V
Gate Threshold Voltage	$V_{\text{GS}(\text{th})}$	$V_{\text{DS}}=V_{\text{GS}}, I_{\text{D}}=250\mu\text{A}$	1.0	1.75	2.5	
Drain-Source On-State Resistance	$R_{\text{DS}(\text{on})}$	$V_{\text{GS}}=10\text{V}, I_{\text{D}}=8\text{A}$	-	12.5	15	$\text{m}\Omega$
		$V_{\text{GS}}=4.5\text{V}, I_{\text{D}}=6\text{A}$	-	15.5	20	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{\text{DS}}=40\text{V}, V_{\text{GS}}=0\text{V}$	-	-	1.0	μA
Gate-Source Leakage Current	I_{GSS}	$V_{\text{GS}}=\pm 20\text{V}, V_{\text{DS}}=0\text{V}$	-	-	± 100	nA
Dynamic (Note 6)						
Total Gate Charge	Q_g	$V_{\text{DS}}=20\text{V}, I_{\text{D}}=10\text{A}, V_{\text{GS}}=4.5\text{V}$ (Note 2,3)	-	10	-	nC
Gate-Source Charge	Q_{gs}		-	3.5	-	
Gate-Drain Charge	Q_{gd}		-	3.6	-	
Input Capacitance	C_{iss}	$V_{\text{DS}}=20\text{V}, V_{\text{GS}}=0\text{V}, f=1.0\text{MHZ}$	-	1040	-	pF
Output Capacitance	C_{oss}		-	117	-	
Reverse Transfer Capacitance	C_{rss}		-	84	-	
Turn-On Delay Time	$t_{\text{d}(\text{on})}$	$V_{\text{DS}}=20\text{V}, I_{\text{D}}=1\text{A}, V_{\text{GS}}=10\text{V}, R_{\text{G}}=6\Omega$ (Note 2,3)	-	9.4	-	ns
Turn-On Rise Time	t_r		-	19	-	
Turn-Off Delay Time	$t_{\text{d}(\text{off})}$		-	66	-	
Turn-Off Fall Time	t_f		-	67	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_s	---	-	-	37	A
Diode Forward Voltage	V_{SD}	$I_s=1\text{A}, V_{\text{GS}}=0\text{V}$	-	0.7	1	V

NOTES:

1. Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature $T_{\text{J}(\text{MAX})}=150^\circ\text{C}$. Ratings are based on low frequency and duty cycles to keep initial $T_j = 25^\circ\text{C}$.
4. The maximum current rating is package limited.
5. R_{eJA} 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. Guaranteed by design, not subject to production testing.

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TYPICAL CHARACTERISTIC CURVES

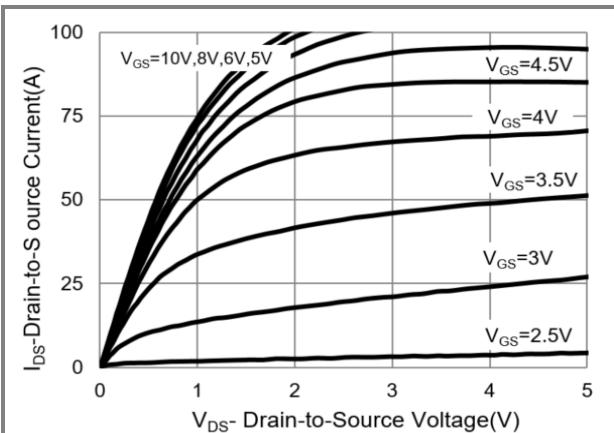


Fig.1 On-Region Characteristics

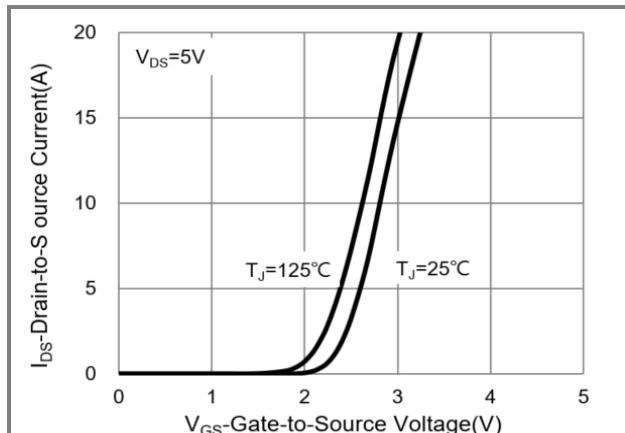


Fig.2 Transfer Characteristics

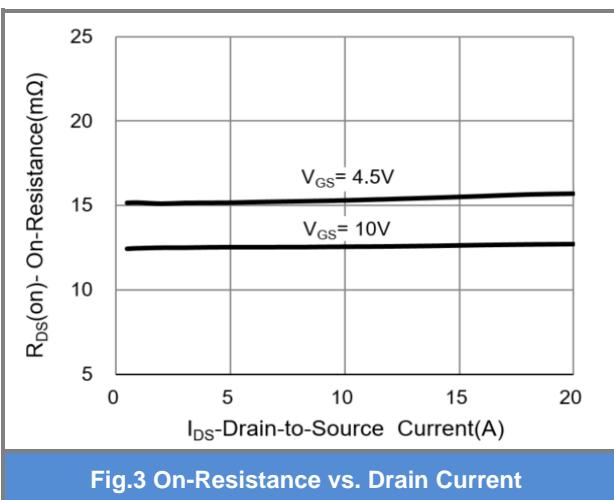


Fig.3 On-Resistance vs. Drain Current

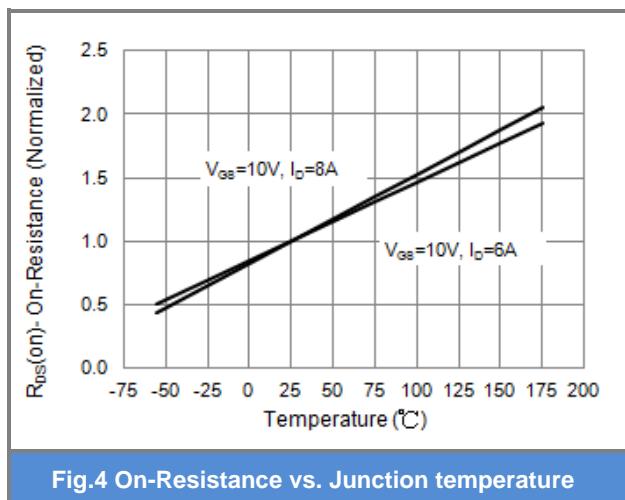


Fig.4 On-Resistance vs. Junction temperature

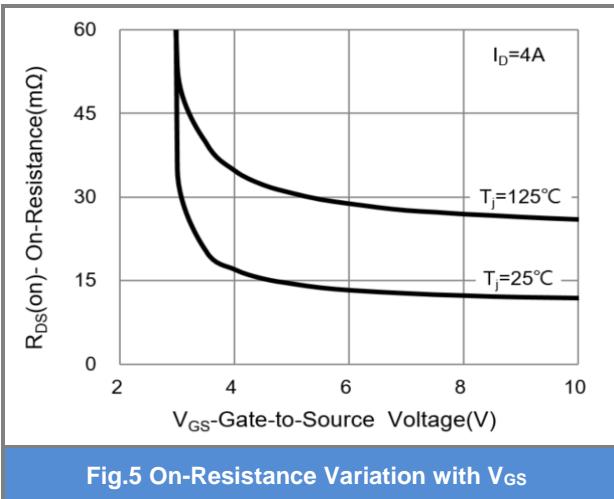


Fig.5 On-Resistance Variation with V_G

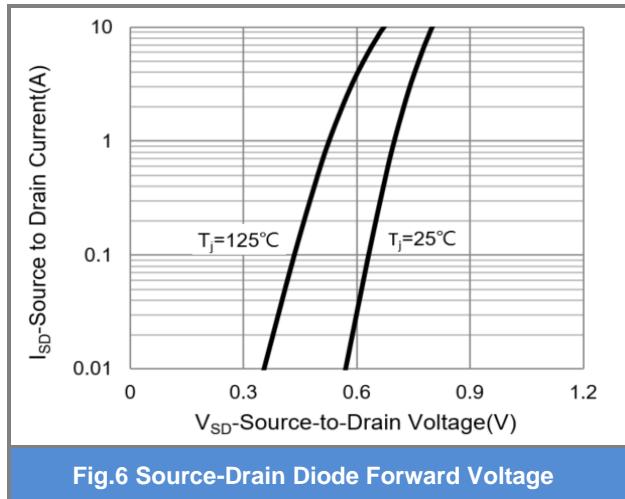


Fig.6 Source-Drain Diode Forward Voltage

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TYPICAL CHARACTERISTIC CURVES

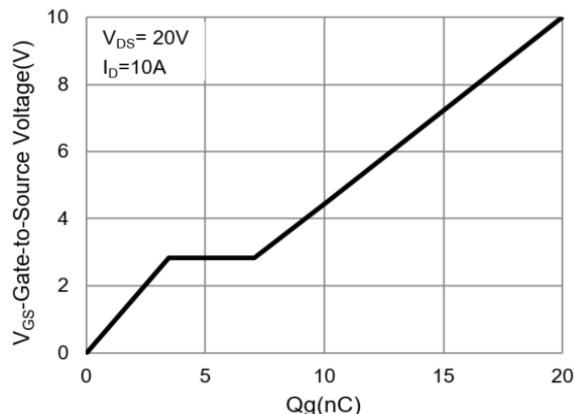


Fig.7 Gate-Charge Characteristics

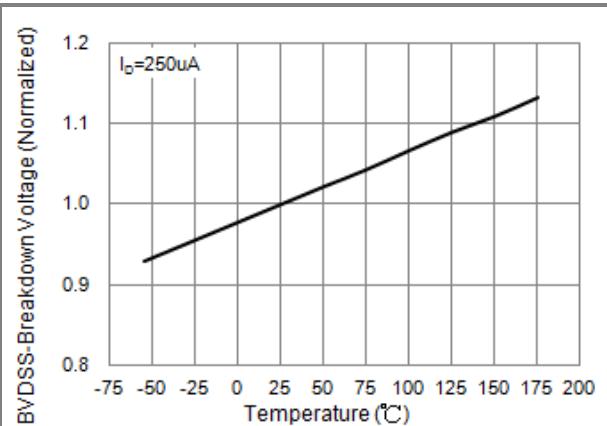


Fig.8 Breakdown Voltage Variation vs. Temperature

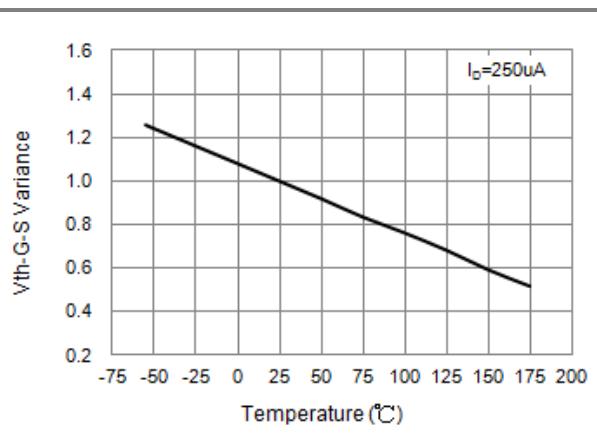


Fig.9 Threshold Voltage Variation with Temperature

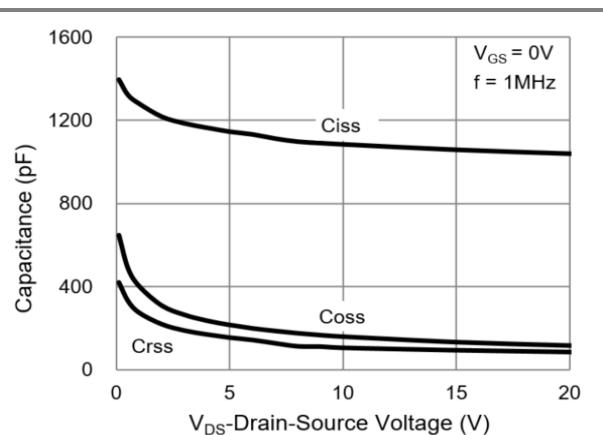


Fig.10 Capacitance vs. Drain-Source Voltage

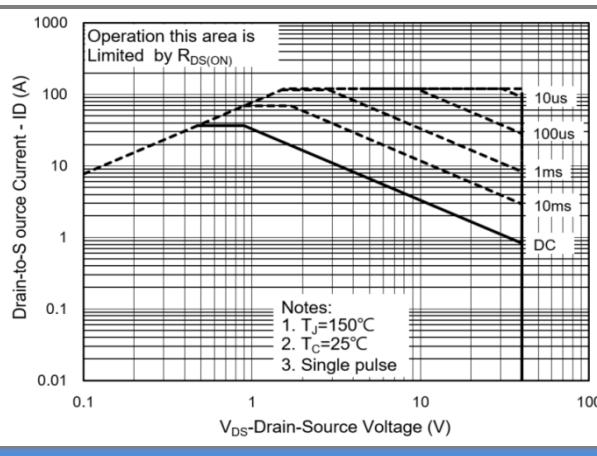


Fig.11 Maximum Safe Operating Area

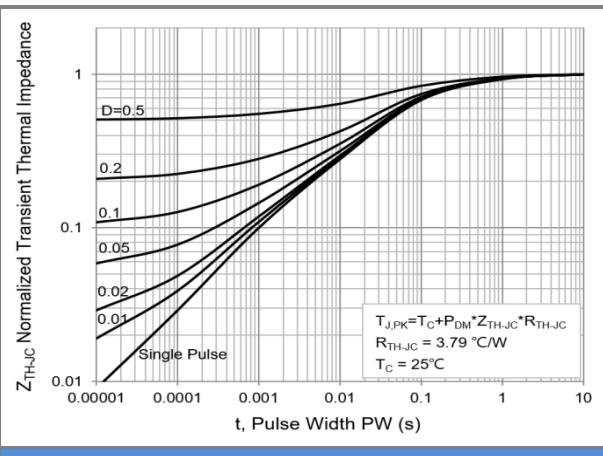


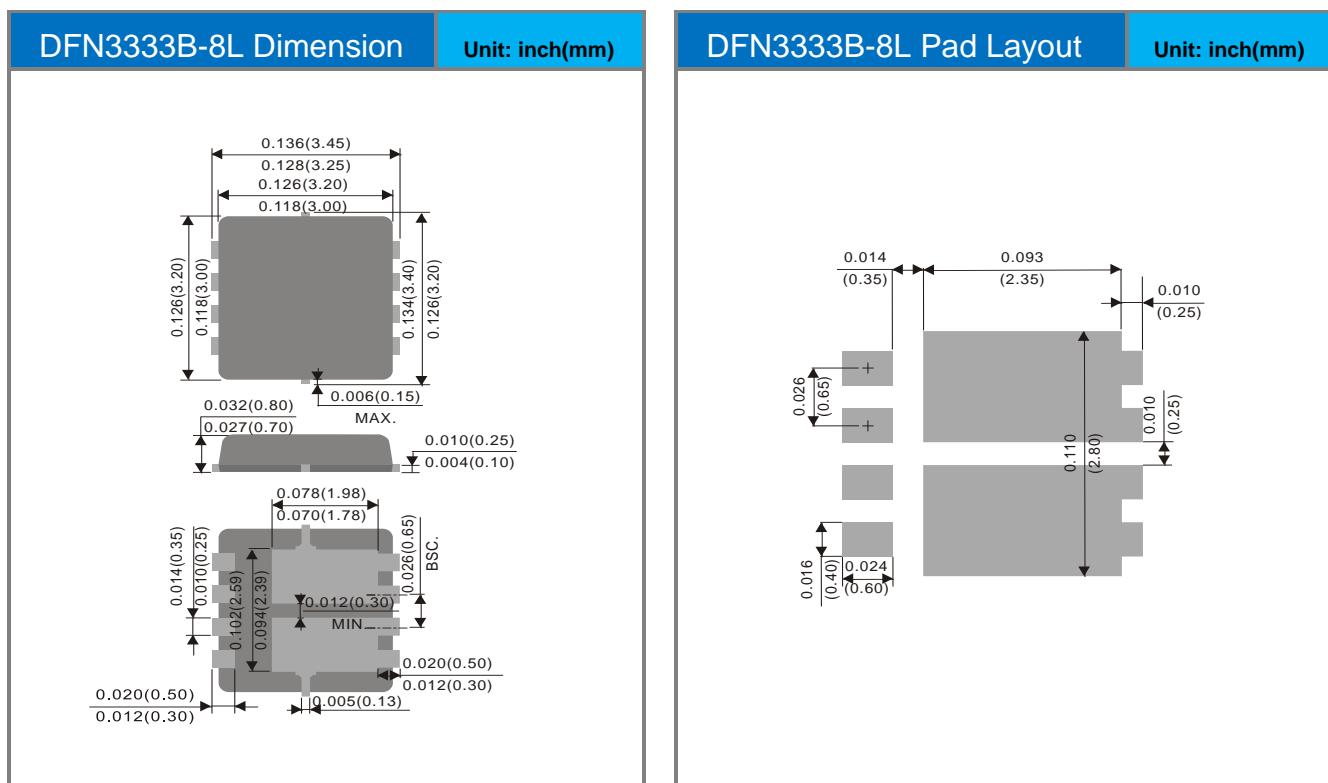
Fig.12 Normalized Transient Thermal Impedance

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PJQ4848P-AU	DFN3333B-8L	5K pcs / 13" reel	4848

Packaging Information & Mounting Pad Layout



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