

PJQ2460

60V N-Channel Enhancement Mode MOSFET

Voltage	60 V	Current	3.2A
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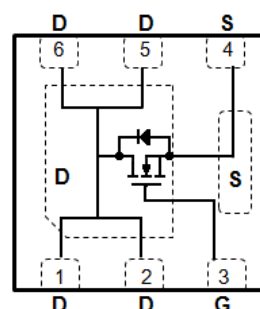
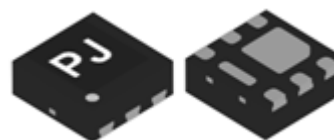
Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_D@3.2A < 75m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V$, $I_D@2.0A < 90m\Omega$
- Advanced Trench Process Technology
- High density cell design for ultra low on-resistance
- Lead free in comply with EU RoHS 2011/65/EU directives.
- Green molding compound as per IEC61249 Std.
(Halogen Free)

Mechanical Data

- Case: DFN2020B-6L Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Marking: 460

DFN2020B-6L



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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V _{DS}	60	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current		I _D	3.2	A
Pulsed Drain Current		I _{DM}	12.8	A
Power Dissipation	T _a =25°C	P _D	2.0	W
	Derate above 25°C		16	mW/°C
Operating Junction and Storage Temperature Range		T _J , T _{STG}	-55~150	°C
Typical Thermal Resistance		R _{θJA}	62.5	°C/W
- Junction to Ambient, t<10s ^(Note 3)				



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

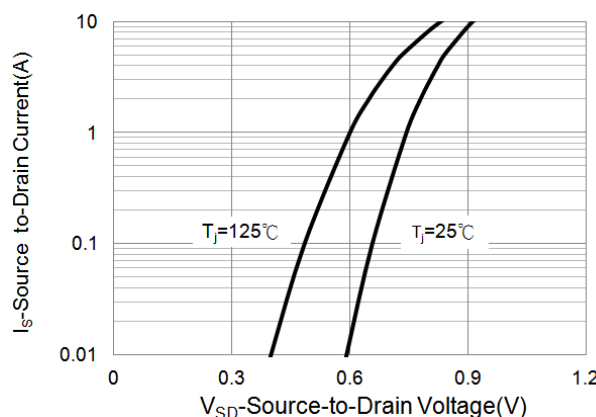
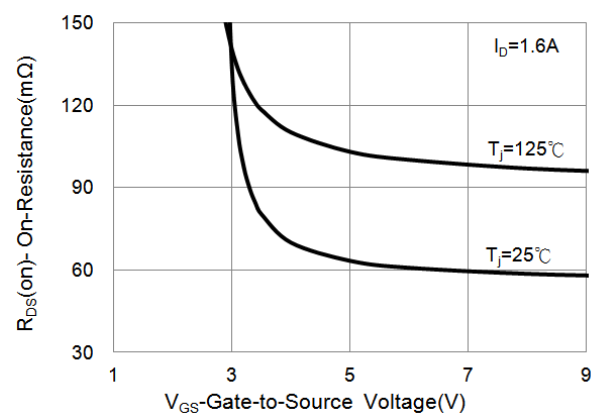
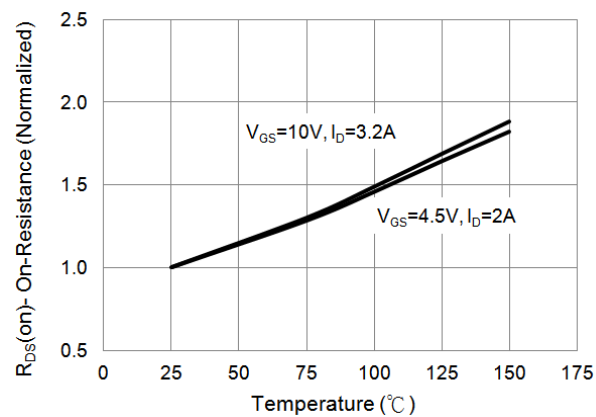
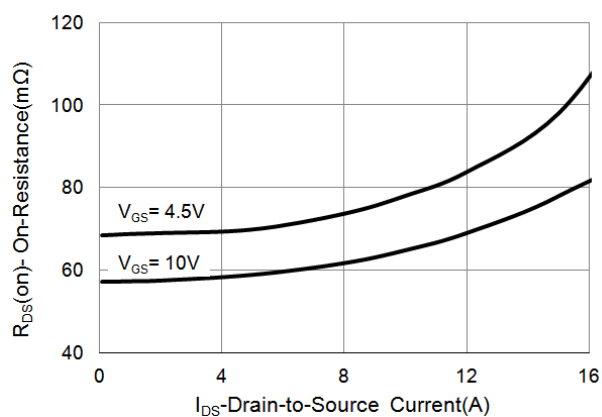
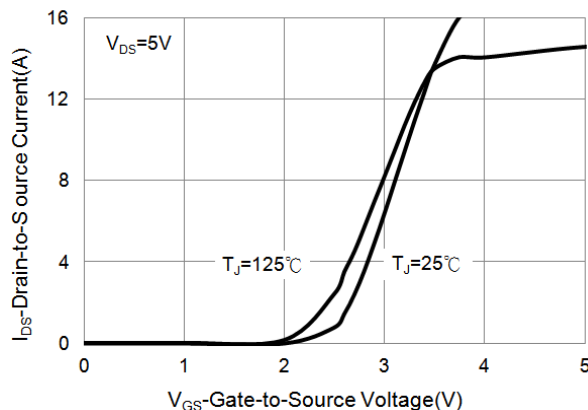
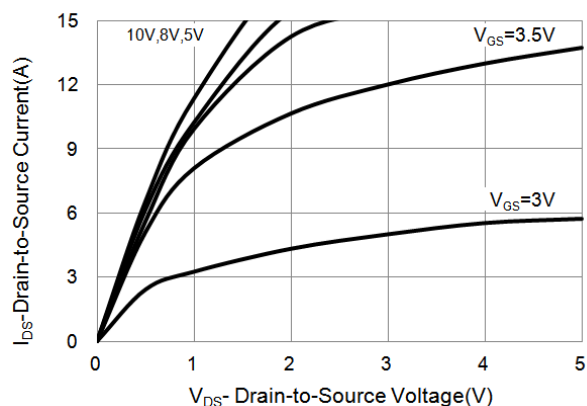
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	60	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.0	1.8	2.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =3.2A	-	53	75	mΩ
		V _{GS} =4.5V, I _D =2.0A	-	61	90	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V	-	-	1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Dynamic (Note 6)						
Total Gate Charge	Q _g	V _{DS} =48V, I _D =3.0A, V _{GS} =10V (Note 1,2)	-	9.3	-	nC
Gate-Source Charge	Q _{gs}		-	2.2	-	
Gate-Drain Charge	Q _{gd}		-	1.9	-	
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1.0MHZ	-	509	-	pF
Output Capacitance	C _{oss}		-	47	-	
Reverse Transfer Capacitance	C _{rss}		-	23	-	
Turn-On Delay Time	td _(on)	V _{DD} =30V, I _D =3.0A, V _{GS} =10V, R _G =3.3Ω (Note 1,2)	-	3.2	-	ns
Turn-On Rise Time	tr		-	9.7	-	
Turn-Off Delay Time	td _(off)		-	18.5	-	
Turn-Off Fall Time	tf		-	6.4	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _s	---	-	-	3.2	A
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V	-	0.75	1.2	V

NOTES :

1. Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
2. Essentially independent of operating temperature typical characteristics.
3. The maximum current rating is package limited.
4. Repetitive rating, pulse width limited by junction temperature $T_J(MAX)=150^{\circ}\text{C}$. Ratings are based on low frequency and duty cycles to keep initial $T_J=25^{\circ}\text{C}$.
5. $R_{\theta JA}$ 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





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TYPICAL CHARACTERISTIC CURVES

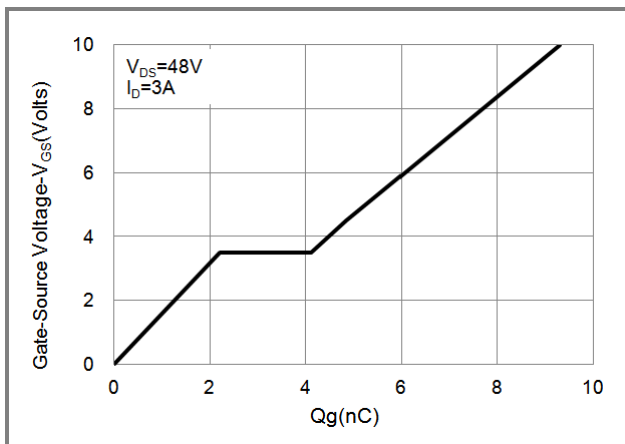


Fig.7 Gate-Charge Characteristics

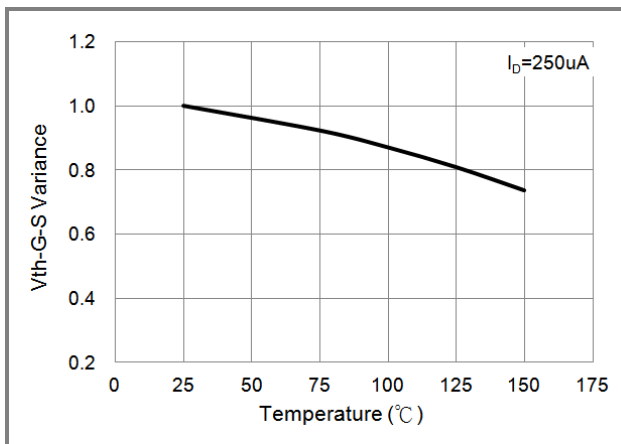


Fig.8 Threshold Voltage Variation with Temperature.

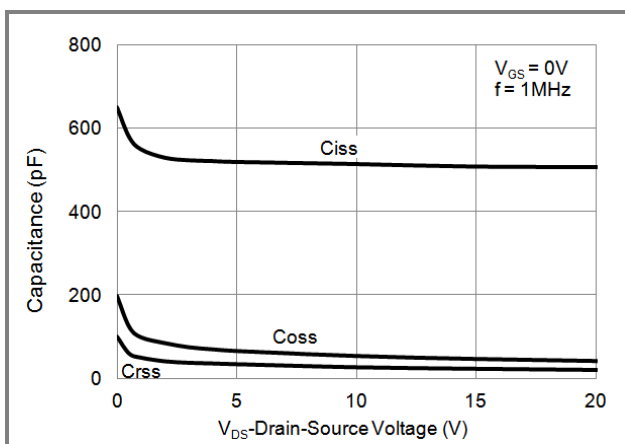


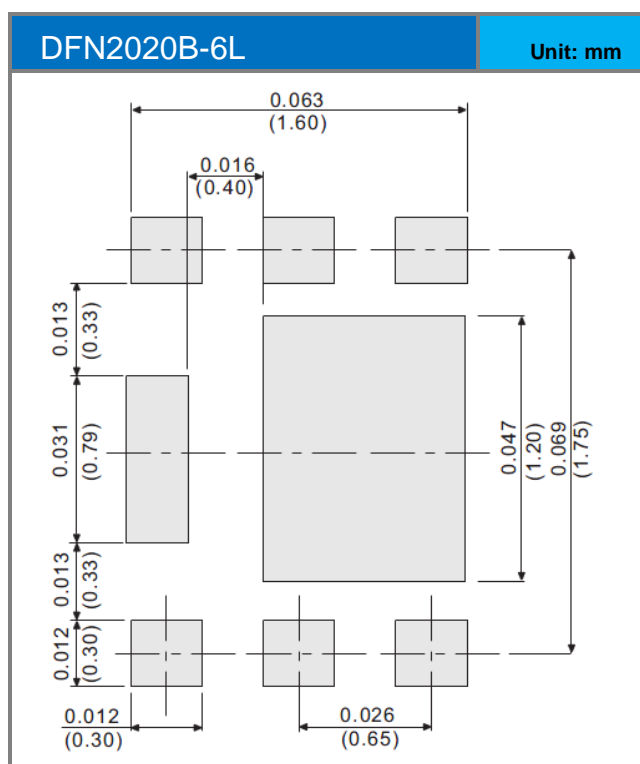
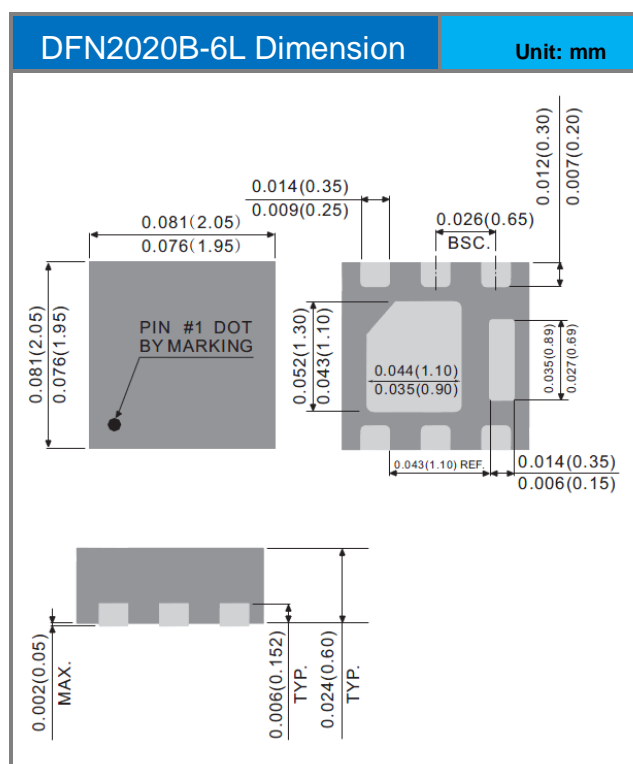
Fig.9 Capacitance vs. Drain-Source Voltage.

PJQ2460

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJQ2460_R1_00001	DFN2020B-6L	3K pcs / 7" reel	460	Halogen free

MOUNTING PAD LAYOUT





PJQ2460

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