PAN	JIT
	SEMI
	CONDUCTOR

#### 40V P-Channel Enhancement Mode MOSFET

Voltage

Current -45 A

DFN5060-8L

#### Features

•  $R_{DS(ON)}$ ,  $V_{GS}$ @-10V,  $I_D$ @-15A<17m $\Omega$ 

-40 V

- $R_{DS(ON)}$ ,  $V_{GS}$ @-4.5V,  $I_D$ @-10A<25m $\Omega$
- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Low reverse transfer capacitance
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

#### **Mechanical Data**

- Case: DFN5060-8L Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0028 ounces, 0.08 grams

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

PARAMETE	R	SYMBOL	LIMIT	UNITS	
Drain-Source Voltage		V <sub>DS</sub>	-40	V	
Gate-Source Voltage		V <sub>GS</sub>	<u>+</u> 20		
Continuous Drain Current (Note 4)	T <sub>C</sub> =25°C		-45	А	
	T <sub>C</sub> =100°C	I <sub>D</sub>	-28		
Pulsed Drain Current (Note 1)	T <sub>C</sub> =25°C	I <sub>DM</sub>	-135	]	
Power Dissipation	T <sub>C</sub> =25°C		63	w	
	T <sub>C</sub> =100°C	PD	25		
Continuous Drain Current (Note 4)	T <sub>A</sub> =25°C		-8.5	A	
	T <sub>A</sub> =70°C	I <sub>D</sub>	-7		
Power Dissipation	T <sub>A</sub> =25°C	5	2		
	T <sub>A</sub> =70°C	Po	1.3	W	
Operating Junction and Storage Temperature Range		TJ,TSTG	-55~150	°C	
Typical Thermal Resistance (Note 4,5)	Junction to Case	$R_{ extsf{ heta}JC}$	2	90 MM	
	Junction to Ambient	R <sub>θJA</sub>	62.5	°C/W	

• Limited only By Maximum Junction Temperature



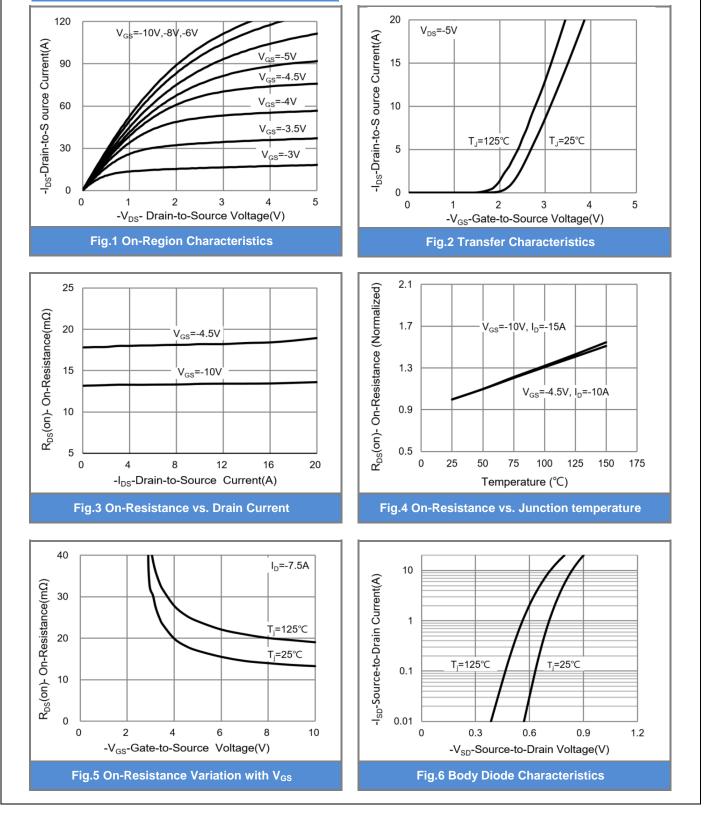
#### **Electrical Characteristics** ( $T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub> V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA		-40	-	-	
Gate Threshold Voltage	V <sub>GS(th)</sub>	$V_{DS}=V_{GS}$ , $I_{D}=-250$ uA	-1	-1.6	-2.5	V
Drain-Source On-State Resistance	_	V <sub>GS</sub> =-10V, I <sub>D</sub> =-15A	-	14	17	mΩ
	$R_{DS(on)}$	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-10A	-	20	25	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-40V, V <sub>GS</sub> =0V	-	-	-1	uA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = <u>+</u> 20V, V <sub>DS</sub> =0V	-	-	<u>+</u> 100	nA
Dynamic (Note 6)						
Total Gate Charge	Qg	$V_{DS}$ =-32V, I <sub>D</sub> =-10A, $V_{GS}$ =-4.5V <sup>(Note 1,2)</sup>	-	19	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	5.3	-	
Gate-Drain Charge	Q <sub>qd</sub>		-	6.6	-	
Input Capacitance	Ciss	V <sub>DS</sub> =-25V, V <sub>GS</sub> =0V,	-	2030	-	pF
Output Capacitance	Coss		-	190	-	
Reverse Transfer Capacitance	Crss	f=1MHZ	-	139	-	
Turn-On Delay Time	td <sub>(on)</sub>		-	8.6	-	
Turn-On Rise Time	t <sub>r</sub>	V <sub>DS</sub> =-20V, I <sub>D</sub> =-1A, V <sub>GS</sub> =-10V, R <sub>G</sub> =6Ω	-	9.6	-	
Turn-Off Delay Time	td <sub>(off)</sub>		-	77	-	ns
Turn-Off Fall Time	t <sub>f</sub>	(	-	39	-	
Drain-Source Diode						
Maximum Continuous Drain-Source					45	A
Diode Forward Current	I <sub>S</sub>		-	-	-45	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A,V <sub>GS</sub> =0V	-	-0.7	-1	V

NOTES :

- 1. Pulse width</br>
- 2. Essentially independent of operating temperature typical characteristics.
- Repetitive rating, pulse width limited by junction temperature T<sub>J(MAX)</sub>=150°C. Ratings are based on low frequency and duty cycles to keep initial T<sub>J</sub>=25°C.
- 4. The maximum current rating is package limited.
- 5. Roja 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 inch<sup>2</sup> with 2oz.square pad of copper.
- 6. Guaranteed by design, not subject to production testing.

April 01,2019-REV.00

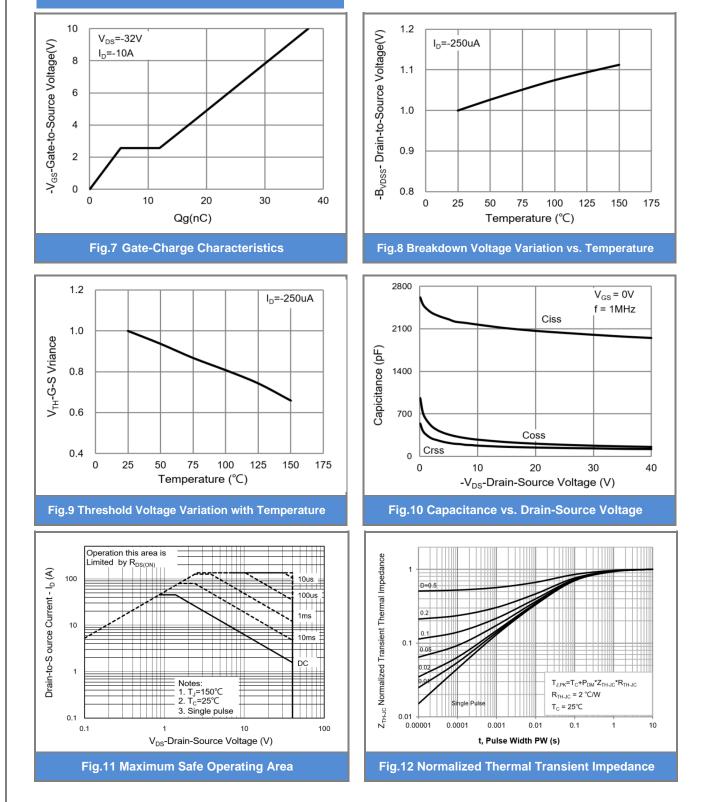


## PJQ5445-AU

**TYPICAL CHARACTERISTIC CURVES** 

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#### **TYPICAL CHARACTERISTIC CURVES**

#### CONDUCTOR

**PJQ5445-AU** 





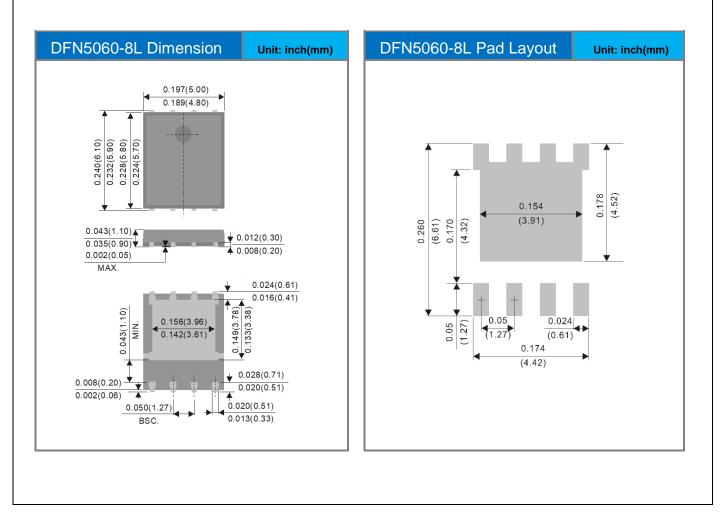


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#### Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJQ5445-AU_R2_000A1	DFN5060-8L	3000pcs / 13" reel	Q5445	Halogen free

#### **Packaging Information & Mounting Pad Layout**







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