



40V 2.7mΩ Half-Bridge N-Ch Power MOSFET

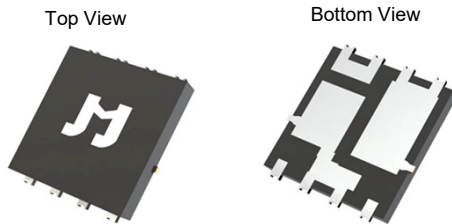
Features

- 100% UIS Tested, 100% R_g Tested
- Pb-free Lead Plating
- Halogen-free and RoHS-compliant
- AEC-Q101 Qualified for Automotive Applications
- Enhanced routing to reduce PCB layout complexity
- Wettable Flanks design support high manufacturability and Automated Optical Inspection (AOI)

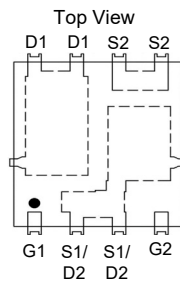
Product Summary

Parameter	Value	Unit
V _{DS}	40	V
V _{GS(th)_Typ}	2.8	V
I _D (@ V _{GS} = 10V) ⁽¹⁾	111	A
R _{DS(ON)_Typ} (@ V _{GS} = 10V)	2.7	mΩ

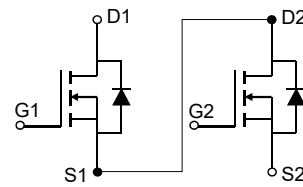
PDFN5x6-8L-HW



Pin Configuration



Chip-1 & Chip-2

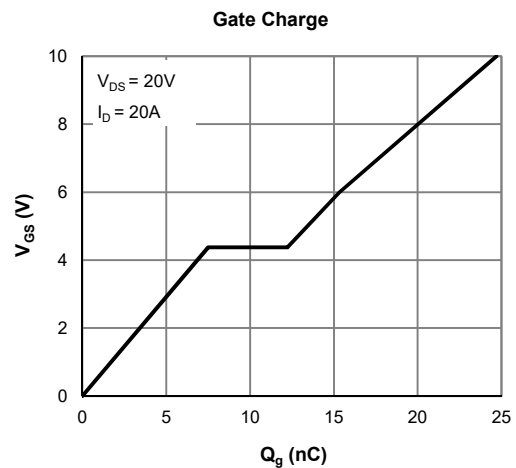
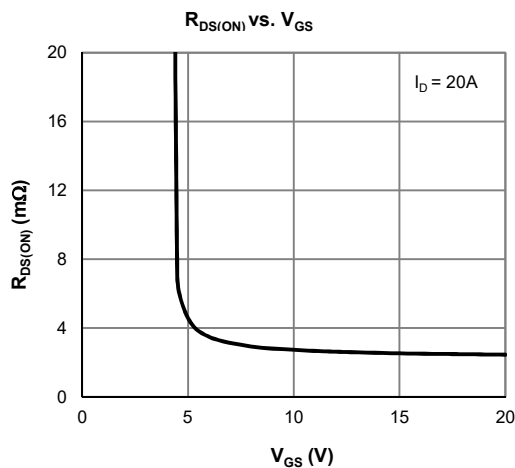


Ordering Information

Device	Package	# of Pins	Marking	MSL	T _J (°C)	Media	Quantity (pcs)
JMSH0403AGHWQ-13	PDFN5x6-8L-HW	8	H0403AHQ	1	-55 to 175	13-inch Reel	5000

Absolute Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V _{DS}	40	V
Gate-to-Source Voltage	V _{GS}	±20	V
Continuous Drain Current ⁽¹⁾	I _D	T _C = 25°C	111
		T _C = 100°C	78
Pulsed Drain Current ⁽²⁾	I _{DM}	340	A
Avalanche Energy ⁽³⁾	E _{AS}	182	mJ
Power Dissipation ⁽⁴⁾	P _D	T _C = 25°C	75
		T _C = 100°C	37
Junction & Storage Temperature Range	T _J , T _{STG}	-55 to 175	°C



**Electrical Characteristics** (@ $T_J = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 250\mu\text{A}$, $V_{GS} = 0\text{V}$	40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 32\text{V}$, $V_{GS} = 0\text{V}$ $T_J = 55^\circ\text{C}$			1.0 5.0	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0\text{V}$, $V_{GS} = \pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\mu\text{A}$	2.2	2.8	3.4	V
Static Drain-Source ON-Resistance	$R_{DS(ON)}$	$V_{GS} = 10\text{V}$, $I_D = 20\text{A}$		2.7	3.3	m Ω
Forward Transconductance	g_{FS}	$V_{DS} = 5\text{V}$, $I_D = 20\text{A}$		27		S
Diode Forward Voltage	V_{SD}	$I_S = 1\text{A}$, $V_{GS} = 0\text{V}$		0.70	1.0	V
Diode Continuous Current	I_S	$T_C = 25^\circ\text{C}$			75	A

DYNAMIC PARAMETERS ⁽⁵⁾

Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = 20\text{V}$, $f = 1\text{MHz}$		1715		pF
Output Capacitance	C_{oss}			894		pF
Reverse Transfer Capacitance	C_{rss}			54		pF
Gate Resistance	R_g	$V_{GS} = 0\text{V}$, $V_{DS} = 0\text{V}$, $f = 1\text{MHz}$		3.5		Ω

SWITCHING PARAMETERS ⁽⁵⁾

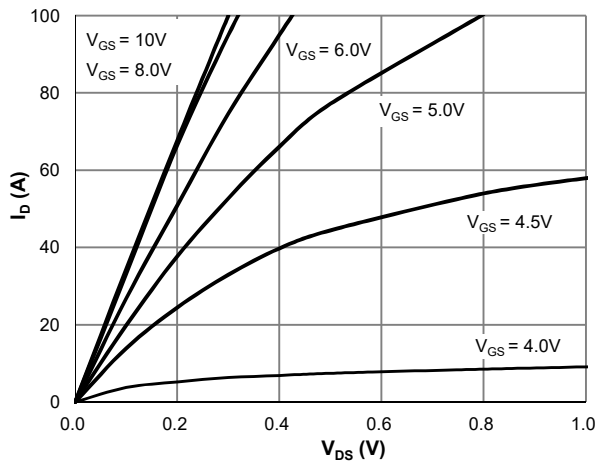
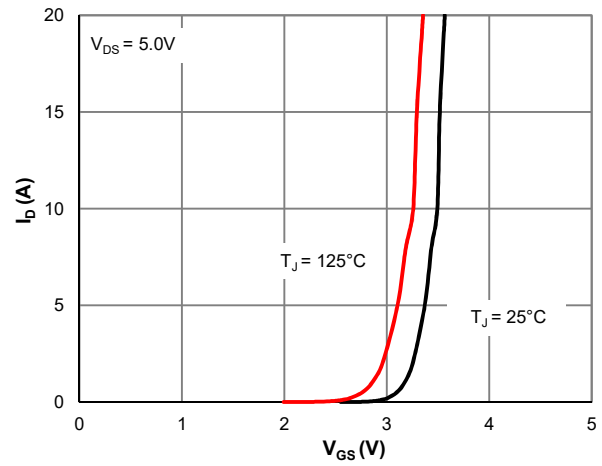
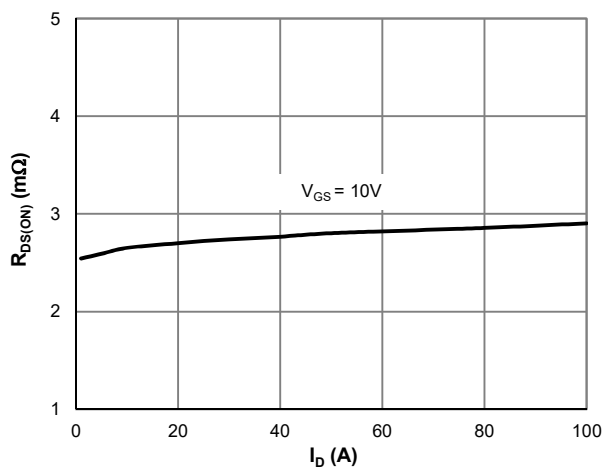
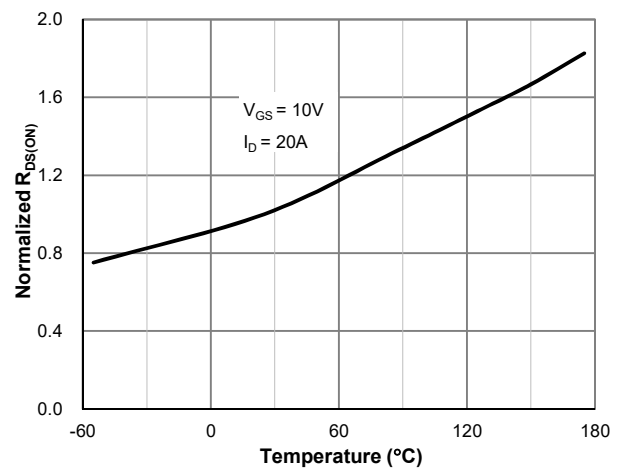
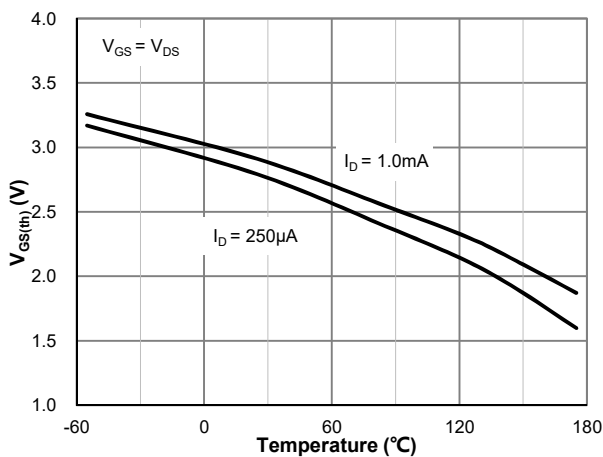
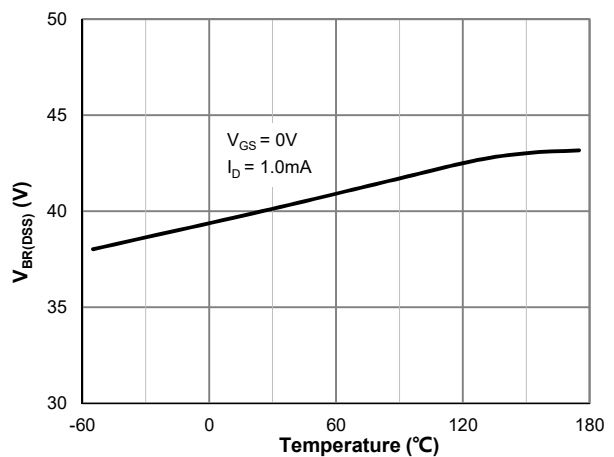
Total Gate Charge (@ $V_{GS} = 10\text{V}$)	Q_g	$V_{GS} = 0$ to 10V $V_{DS} = 20\text{V}$, $I_D = 20\text{A}$		25		nC
Total Gate Charge (@ $V_{GS} = 6.0\text{V}$)	Q_g			15.3		nC
Gate Source Charge	Q_{gs}			7.5		nC
Gate Drain Charge	Q_{gd}			4.7		nC
Turn-On DelayTime	$t_{D(on)}$	$V_{GS} = 10\text{V}$, $V_{DS} = 20\text{V}$ $R_L = 1.0\Omega$, $R_{GEN} = 3\Omega$		9.5		ns
Turn-On Rise Time	t_r			24		ns
Turn-Off DelayTime	$t_{D(off)}$			25		ns
Turn-Off Fall Time	t_f			30		ns
Body Diode Reverse Recovery Time	t_{rr}	$I_F = 20\text{A}$, $dI_F/dt = 100\text{A}/\mu\text{s}$		37		ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F = 20\text{A}$, $dI_F/dt = 100\text{A}/\mu\text{s}$		23		nC

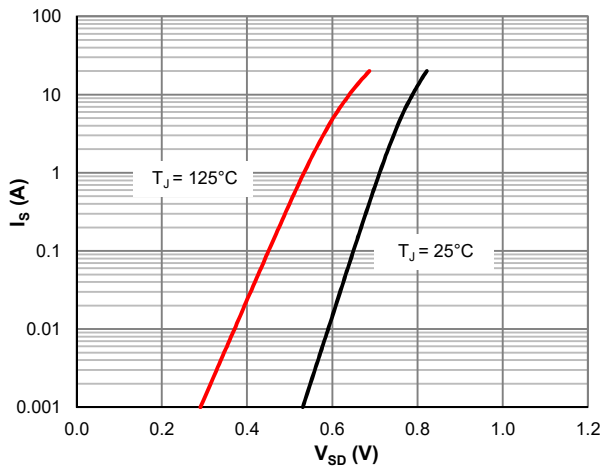
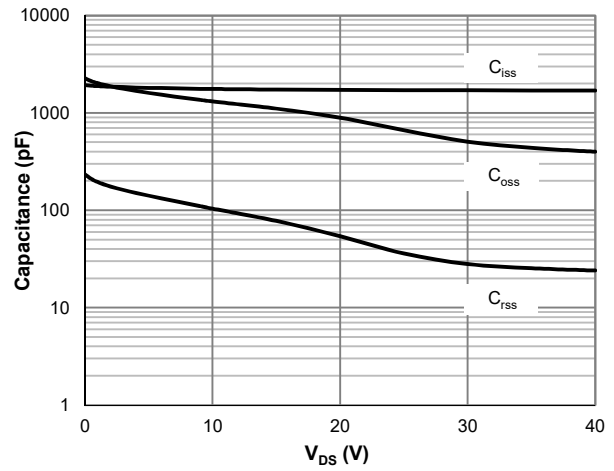
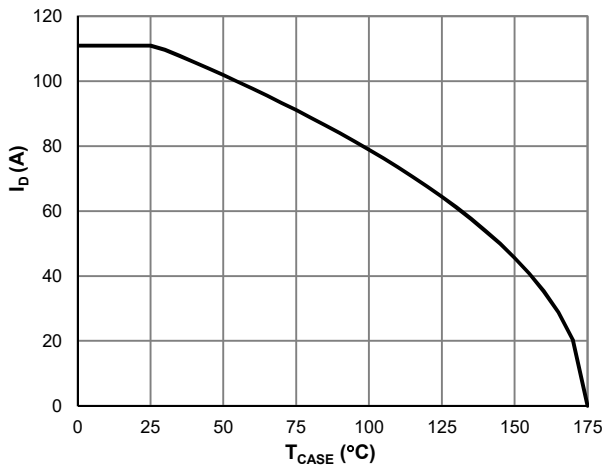
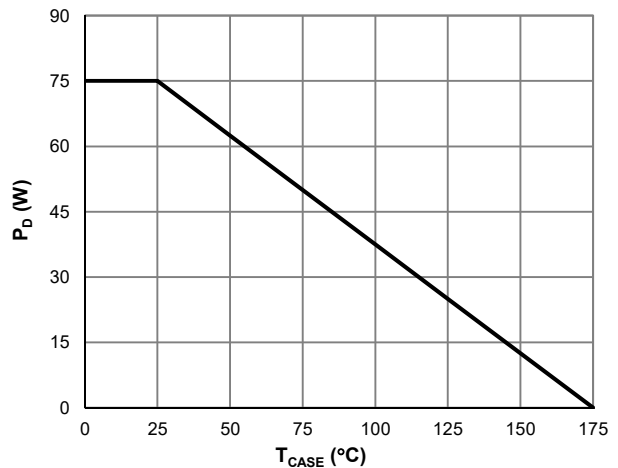
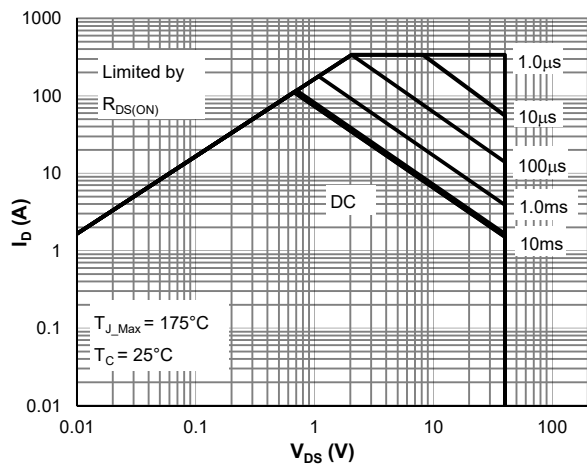
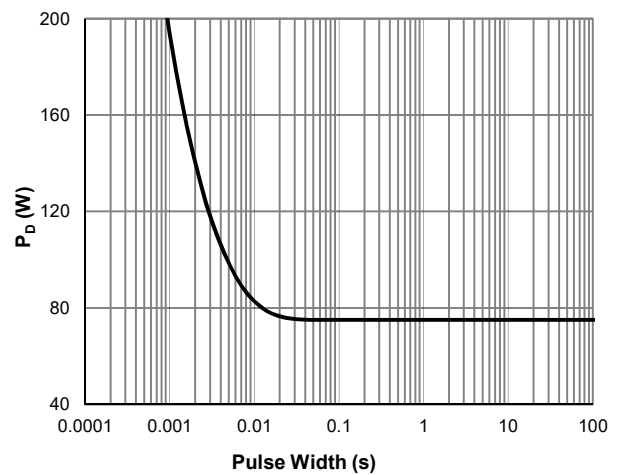
Thermal Performance

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	40	46	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	2.0	2.3	$^\circ\text{C}/\text{W}$

Notes:

1. Computed continuous current assumes the condition of T_{J_Max} while the actual continuous current depends on the thermal & electro-mechanical application board design.
2. This single-pulse measurement was taken under $T_{J_Max} = 175^\circ\text{C}$.
3. E_{AS} of 182 mJ is based on starting $T_J = 25^\circ\text{C}$, $L = 3.0\text{mH}$, $I_{AS} = 11\text{A}$, $V_{GS} = 10\text{V}$, $V_{DD} = 20\text{V}$; 100% test at $L = 0.3\text{mH}$, $I_{AS} = 23\text{A}$.
 $T_{J_Max} = 175^\circ\text{C}$.
4. The power dissipation P_D is based on $T_{J_Max} = 175^\circ\text{C}$.
5. This value is guaranteed by design hence it is not included in the production test.

Typical Electrical & Thermal Characteristics

Figure 1: Saturation Characteristics

Figure 2: Transfer Characteristics

Figure 3: $R_{DS(ON)}$ vs. Drain Current

Figure 4: $R_{DS(ON)}$ vs. Junction Temperature

Figure 5: $V_{GS(th)}$ vs. Junction Temperature

Figure 6: $V_{BR(DSS)}$ vs. Junction Temperature

Typical Electrical & Thermal Characteristics

Figure 7: Body-Diode Characteristics

Figure 8: Capacitance Characteristics

Figure 9: Current De-rating

Figure 10: Power De-rating

Figure 11: Maximum Safe Operating Area

Figure 12: Single Pulse Power Rating, Junction-to-Case



Typical Electrical & Thermal Characteristics

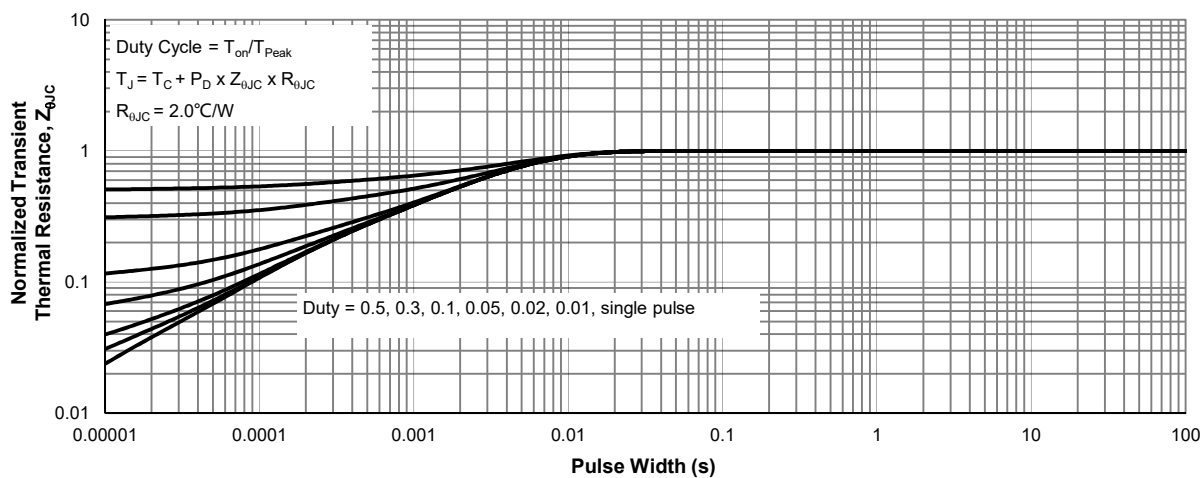


Figure 13: Normalized Maximum Transient Thermal Impedance

单击下面可查看定价，库存，交付和生命周期等信息

[>>JW\(捷捷微\)](#)