



80V 2.9mΩ N-Ch Power MOSFET

Features

- Ultra-low $R_{DS(ON)}$
- Low Gate Charge
- High Current Capability
- 100% UIS Tested, 100% R_g Tested

Applications

- Power Management in Telecom., Industrial Automation, CE
- Motor Driving in Power Tool, E-vehicle, Robotics
- Current Switching in DC/DC & AC/DC (SR) Sub-systems

Product Summary

Parameter	Typ.	Unit
V_{DS}	80	V
$V_{GS(th)}$	2.8	V
I_D (@ $V_{GS} = 10V$)	144	A
$R_{DS(ON)}$ (@ $V_{GS} = 10V$)	2.9	mΩ

PDFN5x6

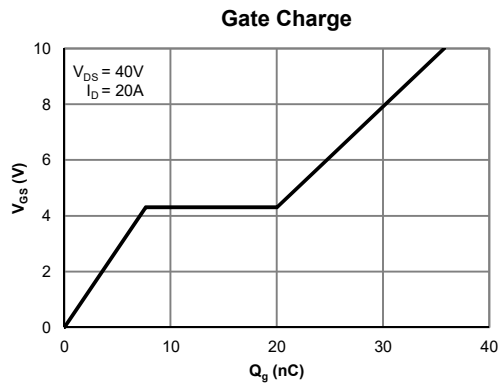
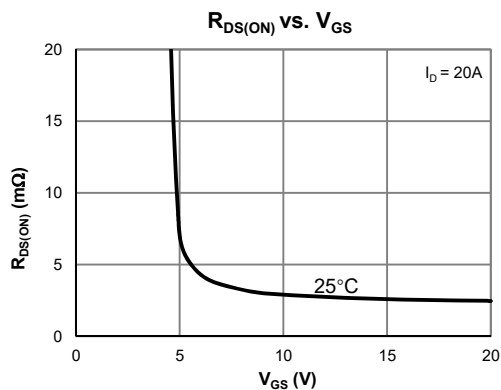


Ordering information

Device	Package	# of Pins	Marking	MSL	T_J (°C)	Media	Quantity (pcs)
JMSH0803AGS-13	PDFN5x6	8	H0803AS	1	-55 to 150	13-inch Reel	3000

Absolute Maximum Ratings (@ $T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	80	V
Gate-to-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	$T_C = 25^\circ C$	144
		$T_C = 70^\circ C$	115
Pulsed Drain Current	I_{DM}	500	A
Avalanche Current	I_{AS}	73	A
Avalanche Energy (@ $L = 0.1mH$)	E_{AS}	266	mJ
Power Dissipation	P_D	$T_C = 25^\circ C$	139
		$T_C = 70^\circ C$	89
Junction & Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$



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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 250\mu\text{A}$, $V_{GS} = 0\text{V}$	80			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 64\text{V}$, $V_{GS} = 0\text{V}$ $T_J = 55^\circ\text{C}$			1 5	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0\text{V}$, $V_{GS} = \pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\mu\text{A}$	2.0	2.8	4.0	V
Static Drain-Source ON-Resistance	$R_{DS(ON)}$	$V_{GS} = 10\text{V}$, $I_D = 20\text{A}$		2.9	3.6	m Ω
Forward Transconductance	g_{FS}	$V_{DS} = 5\text{V}$, $I_D = 20\text{A}$		78		S
Diode Forward Voltage	V_{SD}	$I_S = 1\text{A}$, $V_{GS} = 0\text{V}$		0.7	1.0	V
Diode Continuous Current	I_S	$T_C = 25^\circ\text{C}$			139	A

DYNAMIC PARAMETERS

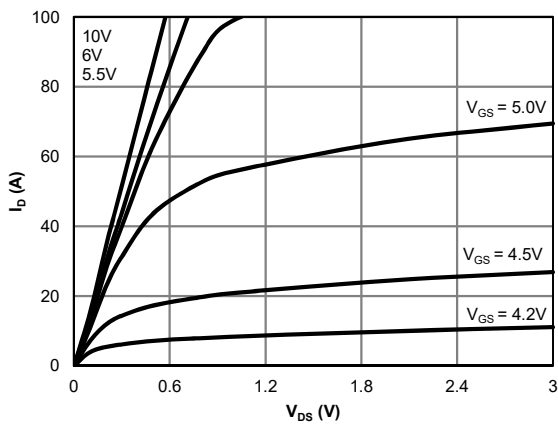
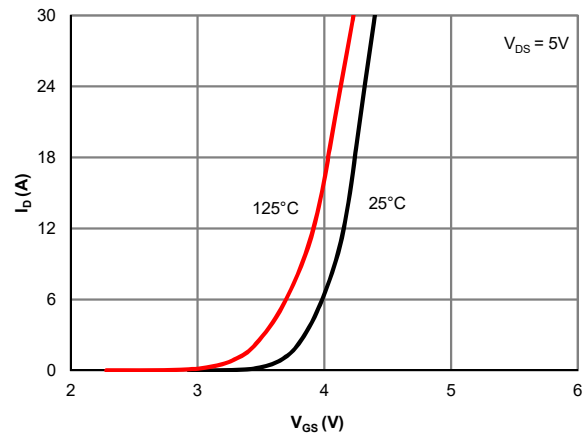
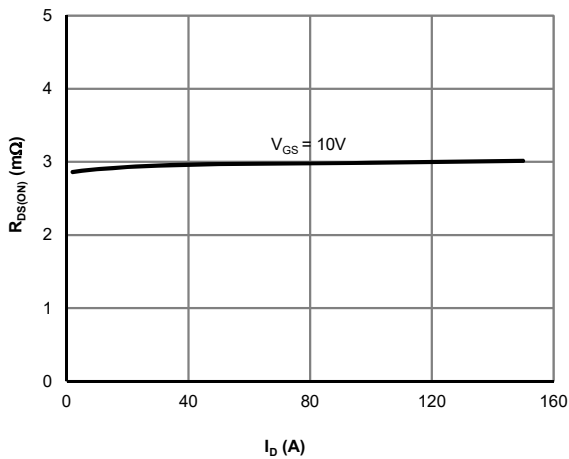
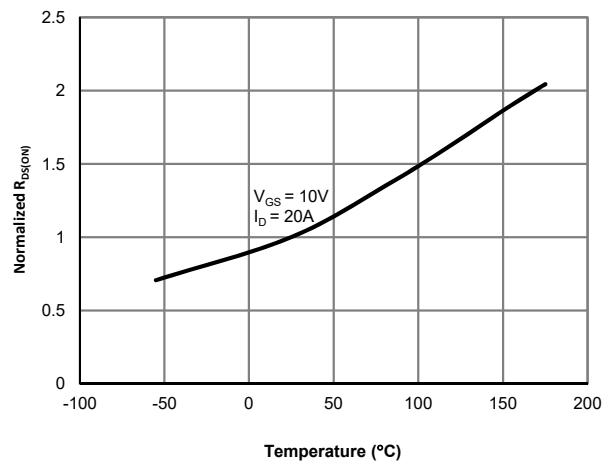
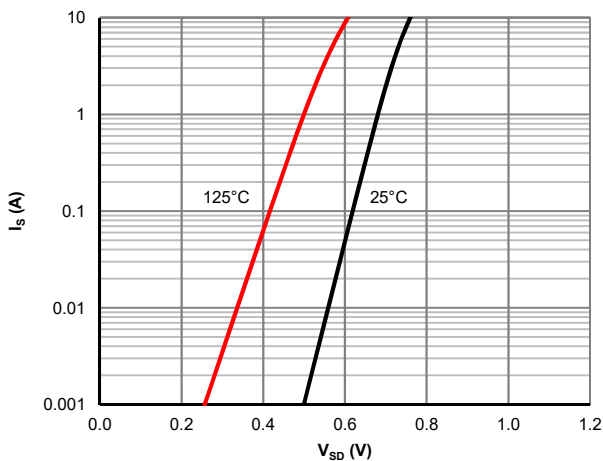
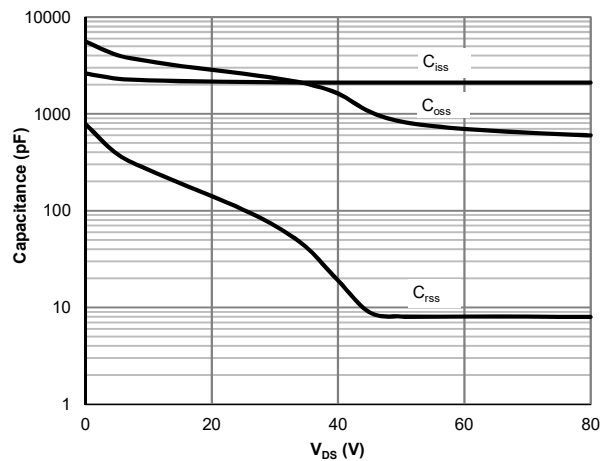
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = 40\text{V}$, $f = 1\text{MHz}$		2107		pF
Output Capacitance	C_{oss}			1624		pF
Reverse Transfer Capacitance	C_{rss}			19		pF
Gate Resistance	R_g	$V_{GS} = 0\text{V}$, $V_{DS} = 0\text{V}$, $f = 1\text{MHz}$		2.0		Ω

SWITCHING PARAMETERS

Total Gate Charge (@ $V_{GS} = 10\text{V}$)	Q_g	$V_{GS} = 0$ to 10V , $V_{DS} = 40\text{V}$, $I_D = 20\text{A}$		35.8		nC
Total Gate Charge (@ $V_{GS} = 6\text{V}$)	Q_g			24.7		nC
Gate Source Charge	Q_{gs}			7.7		nC
Gate Drain Charge	Q_{gd}			12.4		nC
Turn-On DelayTime	$t_{D(on)}$	$V_{GS} = 10\text{V}$, $V_{DS} = 40\text{V}$ $R_L = 2\Omega$, $R_{GEN} = 6\Omega$		10.4		ns
Turn-On Rise Time	t_r			14.5		ns
Turn-Off DelayTime	$t_{D(off)}$			31.5		ns
Turn-Off Fall Time	t_f			20.3		ns
Body Diode Reverse Recovery Time	t_{rr}	$I_F = 20\text{A}$, $di_F/dt = 100\text{A}/\mu\text{s}$		62		ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F = 20\text{A}$, $di_F/dt = 100\text{A}/\mu\text{s}$		126		nC

Thermal Performance

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	50	65	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.7	0.9	$^\circ\text{C}/\text{W}$

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: Body-Diode Characteristics

Figure 6: Capacitance Characteristics

Typical Electrical & Thermal Characteristics

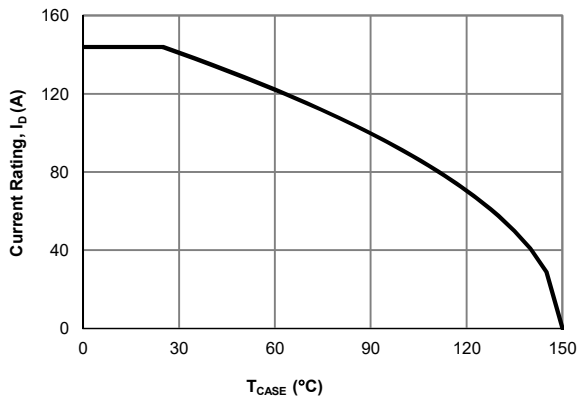


Figure 7: Current De-rating

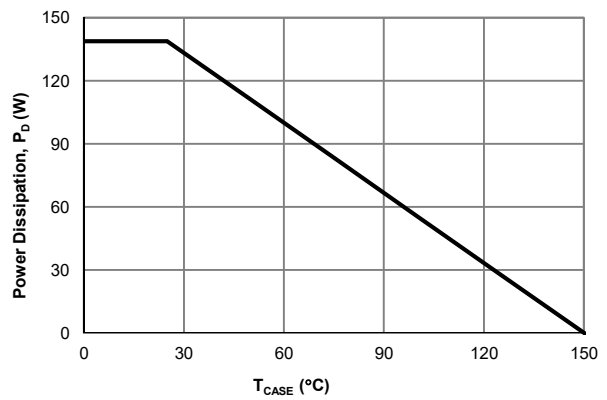


Figure 8: Power De-rating

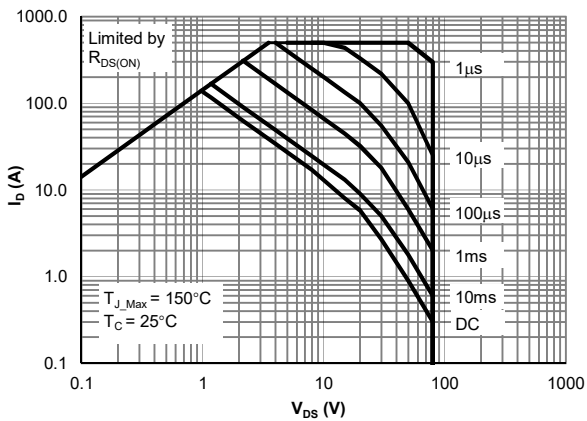


Figure 9: Maximum Safe Operating Area

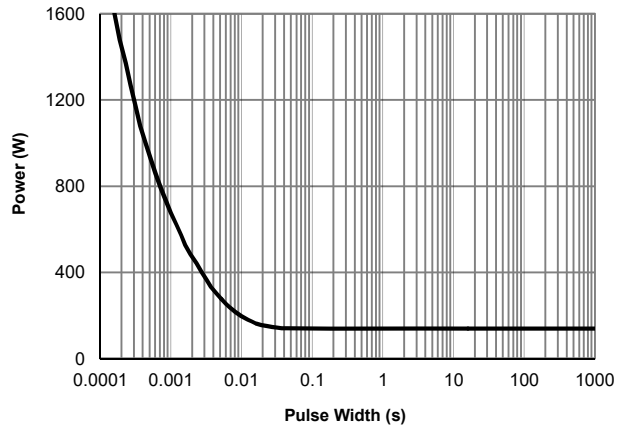


Figure 10: Single Pulse Power Rating, Junction-to-Case

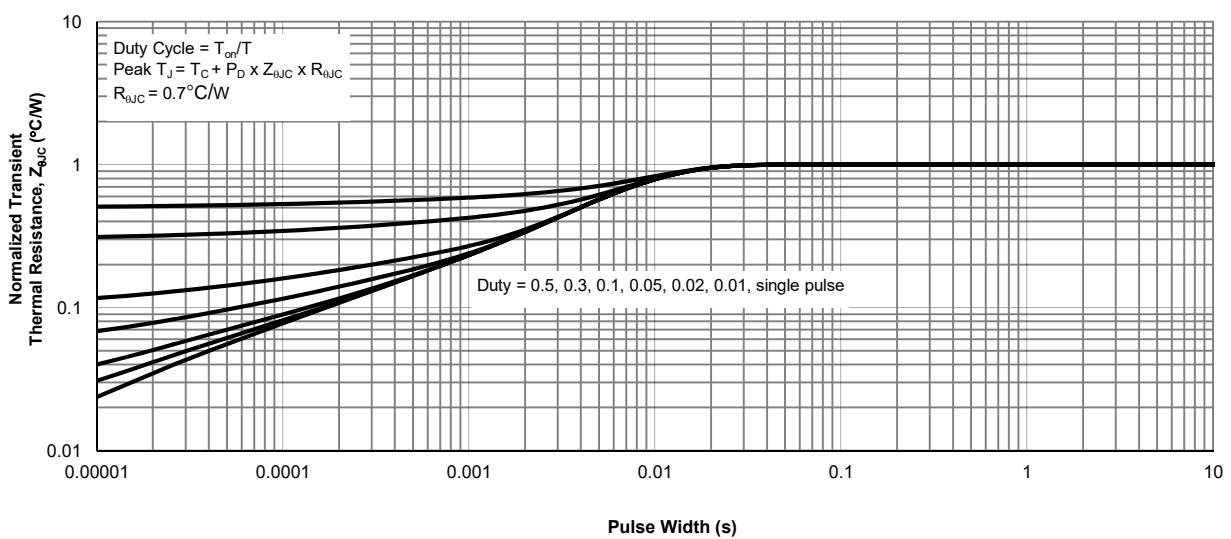
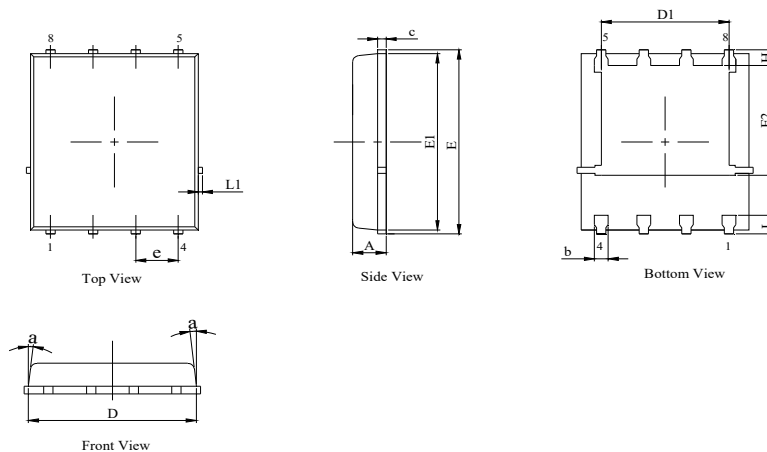


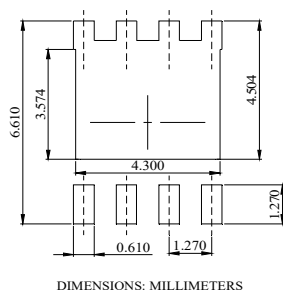
Figure 11: Normalized Maximum Transient Thermal Impedance

PDFN5x6 Package Information (All units in mm)

Package Outline

NOTES:

1. Dimension and tolerance per ASME Y14.5M, 1994.
2. All dimensions in millimeter (angle in degree).
3. Dimensions D and $E1$ do not include mold flash protrusions or gate burrs.

DIM.	MILLIMETER	
	MIN.	MAX.
A	0.90	1.20
b	0.33	0.51
c	0.23	0.33
D	4.80	5.40
D1	3.61	4.25
E	5.90	6.30
E1	5.55	5.95
E2	3.35	3.95
e	1.27 BSC	
H	0.41	0.80
L	0.51	0.80
L1	-	0.15
a	0°	12°

Recommended Footprint


单击下面可查看定价，库存，交付和生命周期等信息

[>>JW\(捷捷微\)](#)