

GENERAL DESCRIPTION

The SGMNM73430 is a power MOSFET with low gate charge and a low on-state resistance. This feature makes it a good choice for load switches and PWM applications.

FEATURES

- High Power and Current Handling Capability
- Low On-State Resistance
- Low Q_G and Capacitance Losses
- Halogen-Free/RoHS Compliant

APPLICATIONS

PWM Applications
 Power Load Switch
 Battery Management
 Wireless Chargers

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNITS
Drain-to-Source Voltage	V_{DSS}	30	V
Gate-to-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current (DC) ⁽¹⁾	I_D	45	A
Continuous Drain Current (Pulse) ⁽²⁾	I_{DM}	90	A
Total Dissipation	P_D	25	W
Avalanche Current ⁽³⁾	I_{AS}	36.4	A
Avalanche Energy ⁽³⁾	E_{AS}	66.25	mJ
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}C$
Lead Temperature (Soldering, 10s)		+260	$^{\circ}C$

Stresses beyond those listed in Absolute Maximum Ratings may cause permanent damage to the device. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

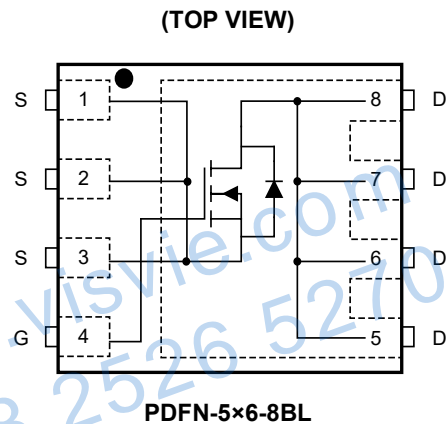
NOTES:

1. Current limited by bond wire.
2. $t_{PULSE} < 10\mu s$.
3. Parts are 100% tested at $V_{GS} = 10V$, $I_L = 26A$, and $E_{AS} = 33.8mJ$.

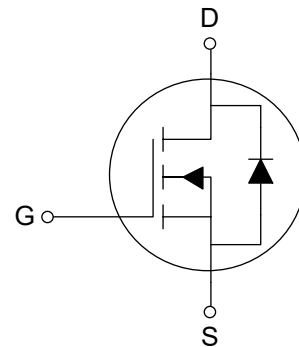
PRODUCT SUMMARY

$R_{DS(ON)}$ (TYP) $V_{GS} = 10V$	$R_{DS(ON)}$ (TYP) $V_{GS} = 4.5V$	I_D (MAX)
4.9m Ω	6.8m Ω	45A

PIN CONFIGURATIONS



EQUIVALENT CIRCUIT



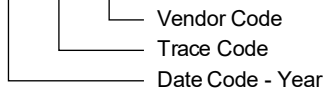
PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGMNM73430	PDFN-5x6-8BL	-55°C to +150°C	SGMNM73430TPDA8G/TR	SGM085 TPDA8 XXXXX	Tape and Reel, 4000

MARKING INFORMATION

NOTE: XXXXX = Date Code, Trace Code and Vendor Code.

XXXXX



Green (RoHS & HSF): SG Micro Corp defines "Green" to mean Pb-Free (RoHS compatible) and free of halogen substances. If you have additional comments or questions, please contact your SGMICRO representative directly.

DISCLAIMER

SG Micro Corp reserves the right to make any change in circuit design, or specifications without prior notice.

THERMAL RESISTANCE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNITS
Junction to Case Thermal Resistance	$R_{\theta JC}$	5	°C/W
Junction to Ambient Thermal Resistance	$R_{\theta JA}$	45	°C/W

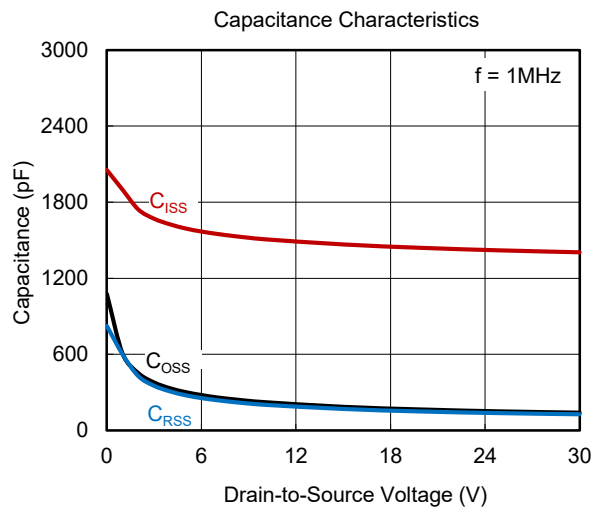
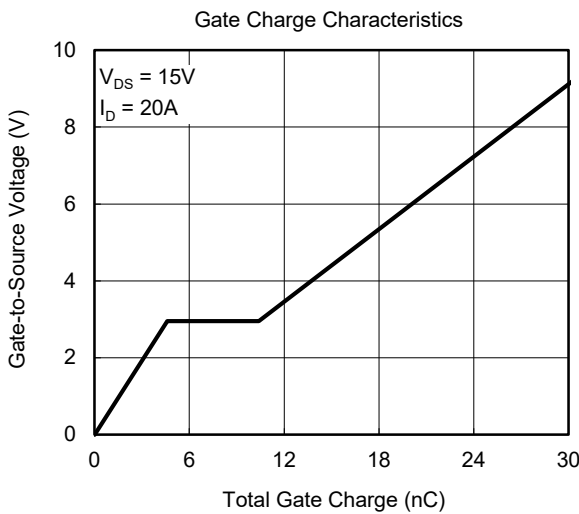
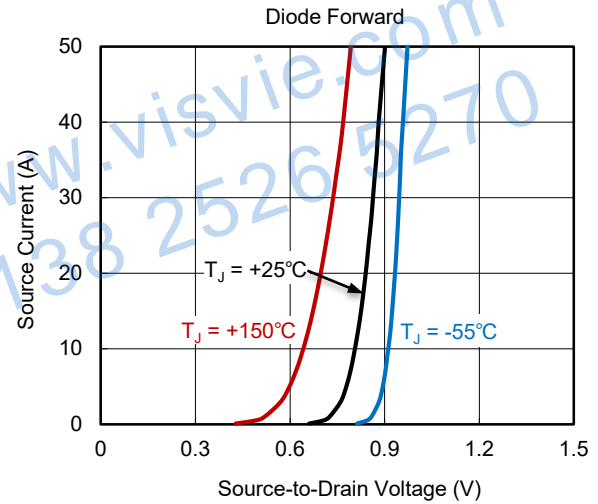
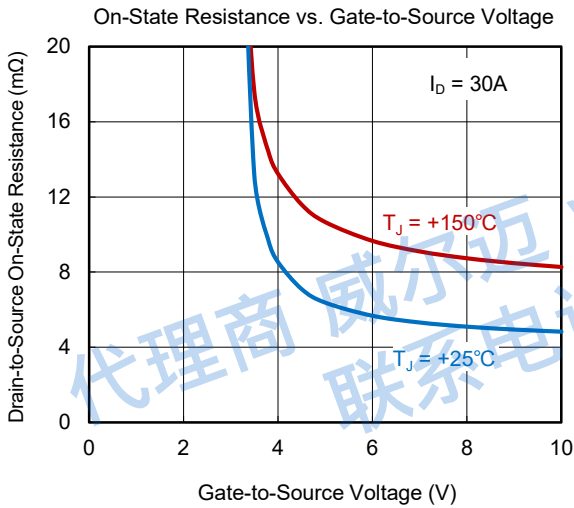
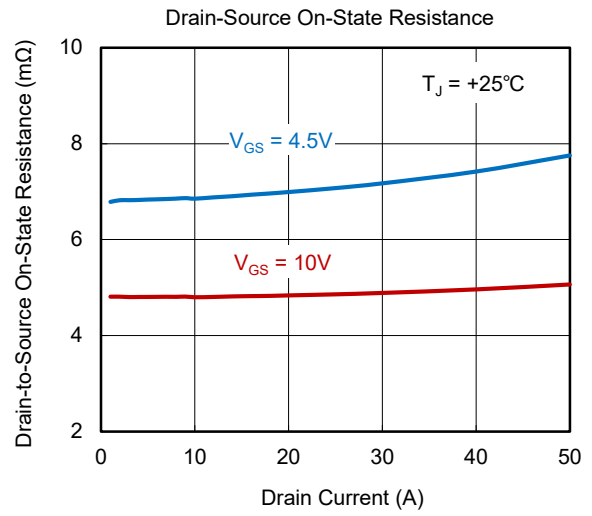
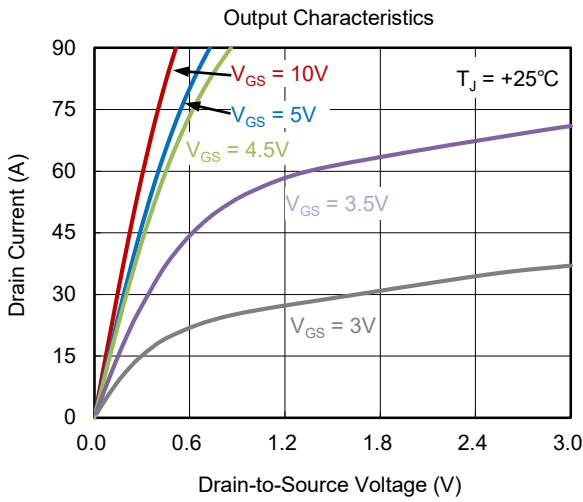
代理商 威尔迈
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ELECTRICAL CHARACTERISTICS

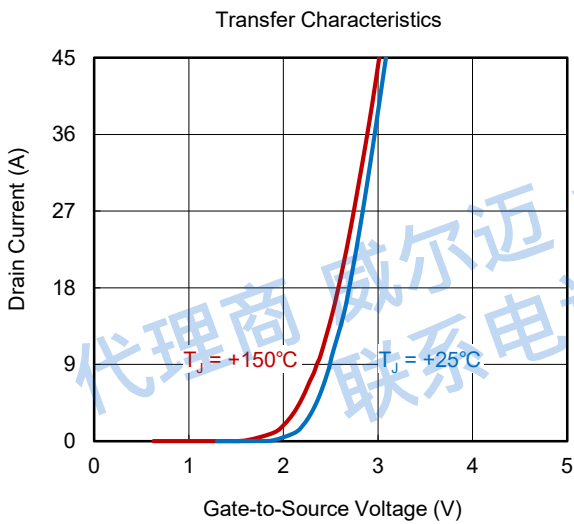
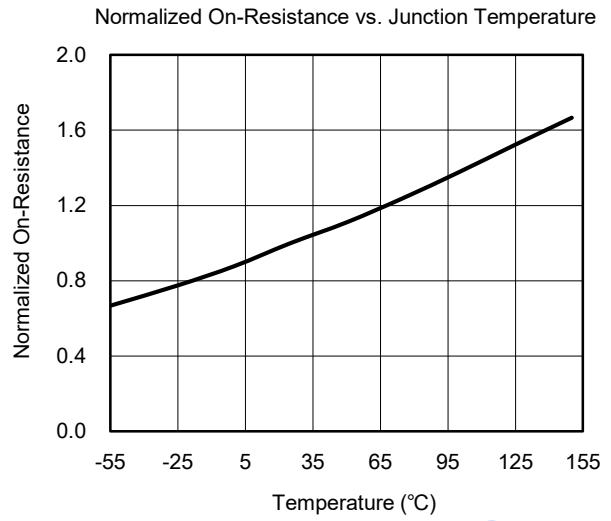
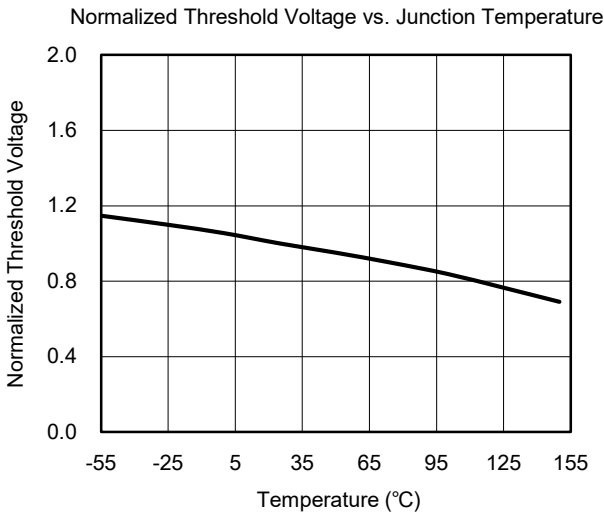
(T_A = +25°C, unless otherwise noted.)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Static OFF Characteristics						
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D = 250μA, V _{GS} = 0V	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Static ON Characteristics						
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _D = 250μA	1	1.5	2	V
Drain-to-Source On-State Resistance	R _{DS(ON)}	I _D = 30A, V _{GS} = 10V		4.9	7	mΩ
		I _D = 20A, V _{GS} = 4.5V		6.8	10	
Forward Transconductance	g _{fs}	V _{DS} = 5V, I _D = 20A		25		S
Gate Resistance	R _G	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		1.2		Ω
Diode Characteristics						
Diode Forward Voltage	V _{F(SD)}	V _{GS} = 0V, I _S = 1A		0.7	1.2	V
Reverse Recovery Time	t _{RR}	I _S = 20A, V _{GS} = 0V, di/dt = 100A/μs		10		ns
Reverse Recovery Charge	Q _{RR}			3.4		nC
Dynamic Characteristics						
Input Capacitance	C _{ISS}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		1477		pF
Output Capacitance	C _{OSS}			185		
Reverse Transfer Capacitance	C _{RSS}			165		
Total Gate Charge	Q _G	V _{DS} = 15V, V _{GS} = 10V, I _D = 20A		32.8		nC
Gate-to-Source Charge	Q _{GS}			4.6		
Gate-to-Drain Charge	Q _{GD}			5.8		
Switch Characteristics						
Turn-On Delay Time	t _{D(ON)}	V _{DS} = 15V, V _{GS} = 10V, I _D = 20A, R _G = 3Ω		18		ns
Rise Time	t _r			49		
Turn-Off Delay Time	t _{D(OFF)}			33		
Fall Time	t _f			25		

TYPICAL PERFORMANCE CHARACTERISTICS



TYPICAL PERFORMANCE CHARACTERISTICS (continued)



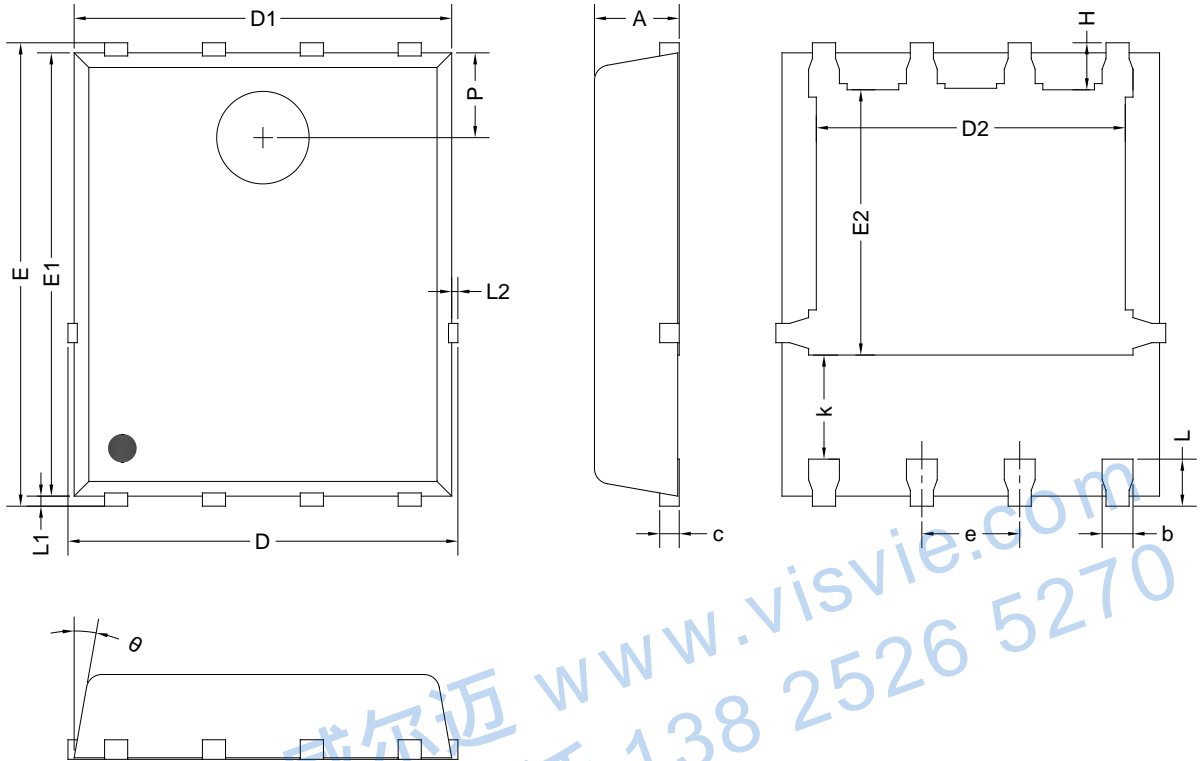
REVISION HISTORY

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

Changes from Original (NOVEMBER 2023) to REV.A	Page
Changed from Product Preview to Production Data	All

PACKAGE OUTLINE DIMENSIONS

PDFN-5x6-8BL

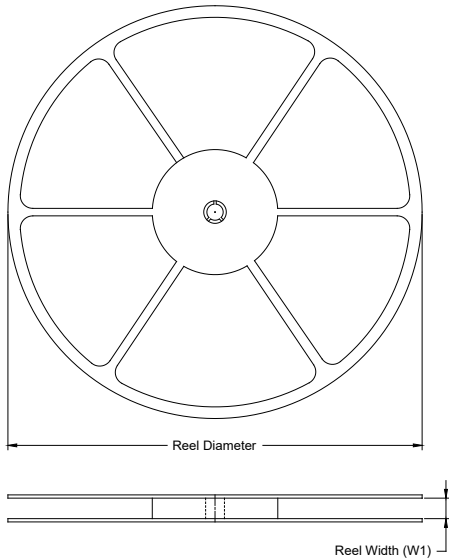


Symbol	Dimensions In Millimeters		
	MIN	MOD	MAX
A	1.000	1.100	1.200
b	0.350	0.400	0.450
c	0.210	0.250	0.340
D	4.800	-	5.100
D1	4.800	4.900	5.000
D2	3.910	4.010	4.110
E	5.900	6.000	6.100
E1	5.700	5.750	5.800
E2	3.340	3.440	3.540
e	1.270 BSC		
H	0.510	0.610	0.710
k	1.100	-	-
L	0.510	0.610	0.710
L1	0.060	0.130	0.200
L2	-	-	0.100
P	1.000	1.100	1.200
θ	8°	10°	12°

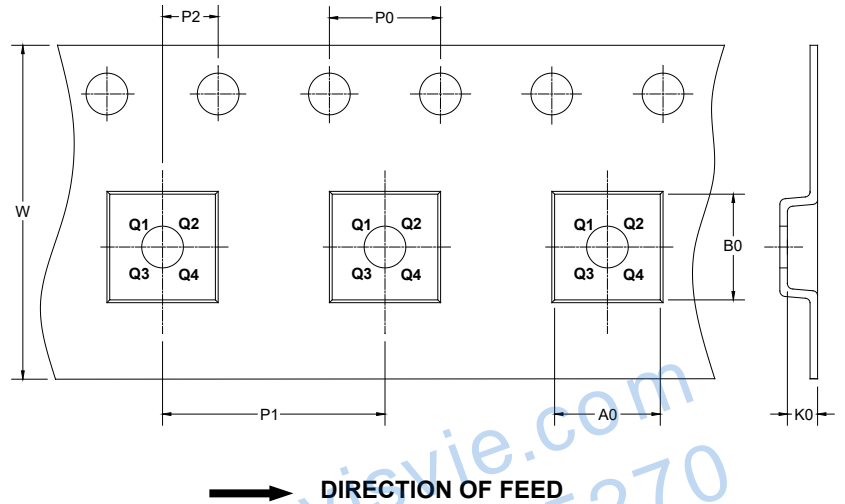
NOTE: This drawing is subject to change without notice.

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
PDFN-5×6-8BL	13"	12.4	6.45	5.30	1.40	4.0	8.0	2.0	12.0	Q1

DD0001

PACKAGE INFORMATION

CARTON BOX DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF CARTON BOX

Reel Type	Length (mm)	Width (mm)	Height (mm)	Pizza/Carton
13"	386	280	370	5

DD0002

代理商 威尔迈 www.wisvie.com
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