

FEATURES

- Low On-State Resistance
- Low Total Gate Charge and Capacitance Losses
- Small Footprint (3.3×3.3mm²) for Compact Design
- RoHS Compliant and Halogen-Free

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNITS
Drain-to-Source Voltage	V _{DS}	30	V
Gate-to-Source Voltage	V _{GS}	±20	V
Drain Current ⁽¹⁾	I _D	T _A = +25°C	21
		T _A = +70°C	17
		T _C = +25°C	75
		T _C = +100°C	47
Drain Current (Pulse) ⁽²⁾	I _{DM}	160	A
Total Dissipation	P _D	T _A = +25°C	2.2
		T _A = +70°C	1.4
		T _C = +25°C	33
		T _C = +100°C	13
Avalanche Current ⁽³⁾	I _{AS}	38	A
Avalanche Energy ⁽³⁾	E _{AS}	72.2	mJ
Junction Temperature	T _J	+150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C
Lead Temperature (Soldering, 10s)		+260	°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.

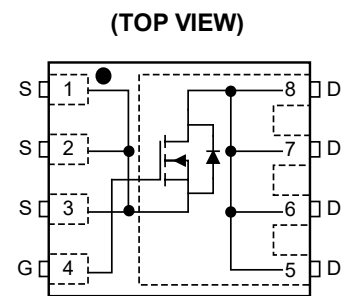
NOTES:

1. The current will be limited by PCB, thermal design and operating temperature.
2. t_{PULSE} < 10µs.
3. Parts are 100% tested at V_{GS} = 10V, I_L = 26.8A, and E_{AS} = 36mJ.

PRODUCT SUMMARY

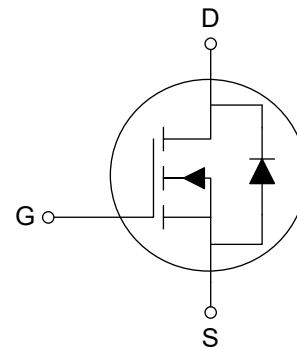
R _{DS(on)} (TYP) V _{GS} = 10V	R _{DS(on)} (MAX) V _{GS} = 10V	I _D (MAX) T _C = +25°C
2.9mΩ	3.6mΩ	75A

PIN CONFIGURATION



PDFN-3.3×3.3-8L

EQUIVALENT CIRCUIT



APPLICATIONS

- CPU Power Delivery
- DC/DC Converters
- Power Load Switch
- Notebook Battery Management

SGMNQ36430

30V, Power, Single N-Channel, PDFN Package, MOSFET

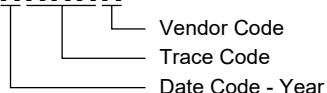
PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGMNQ36430	PDFN-3.3×3.3-8L	-55°C to +150°C	SGMNQ36430TPDB8G/TR	SGMONS TPDB8 XXXXX	Tape and Reel, 5000

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.

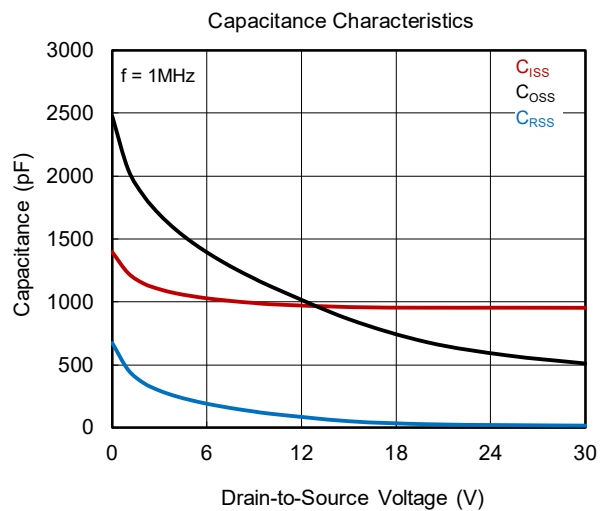
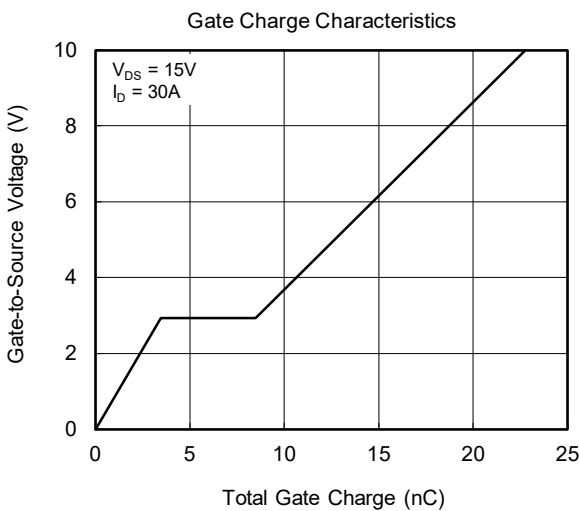
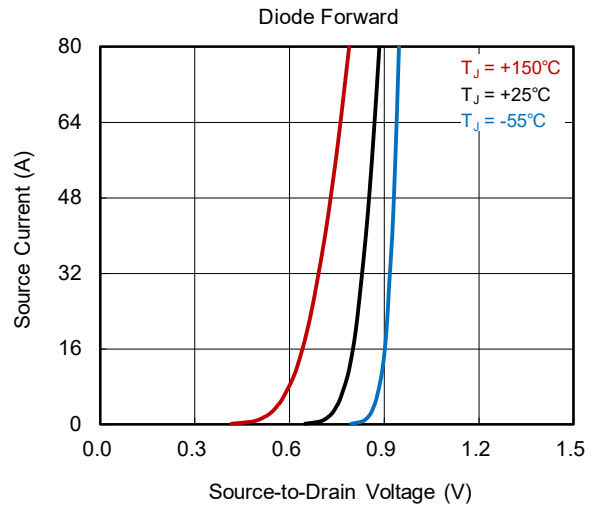
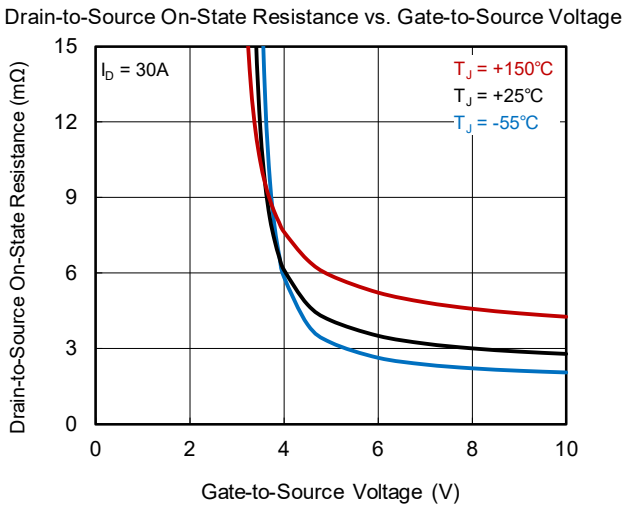
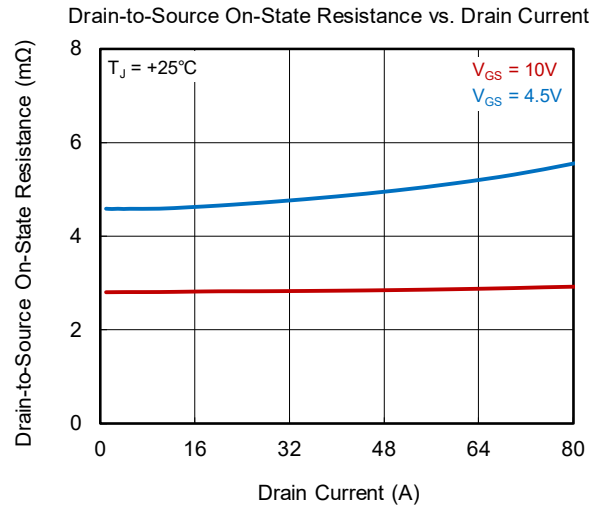
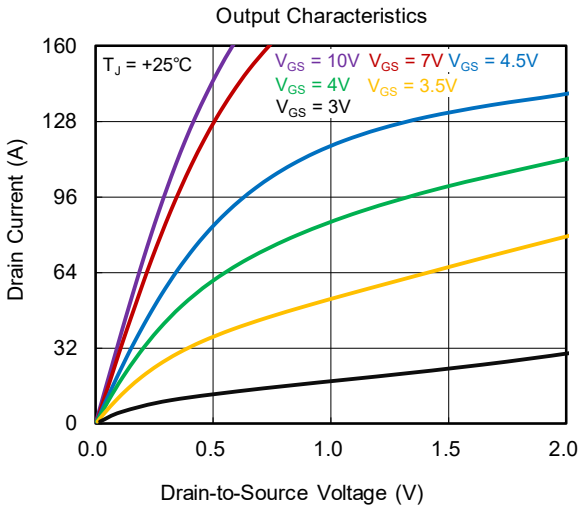
THERMAL RESISTANCE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNITS
Junction-to-Case Thermal Resistance	$R_{\theta JC}$	3.7	°C/W
Junction-to-Ambient Thermal Resistance	$R_{\theta JA}$	56	°C/W

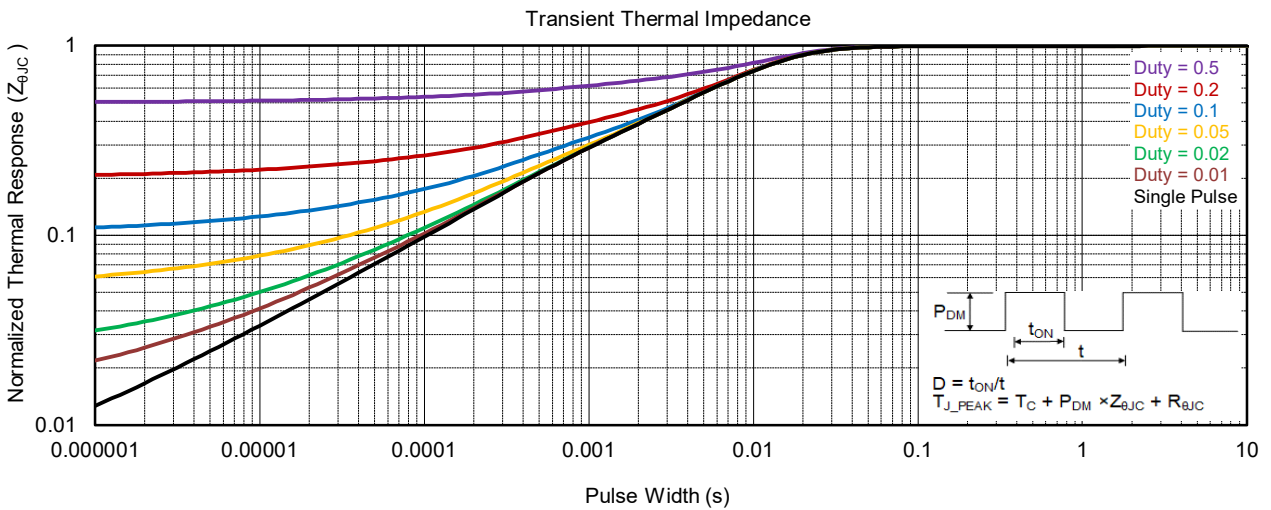
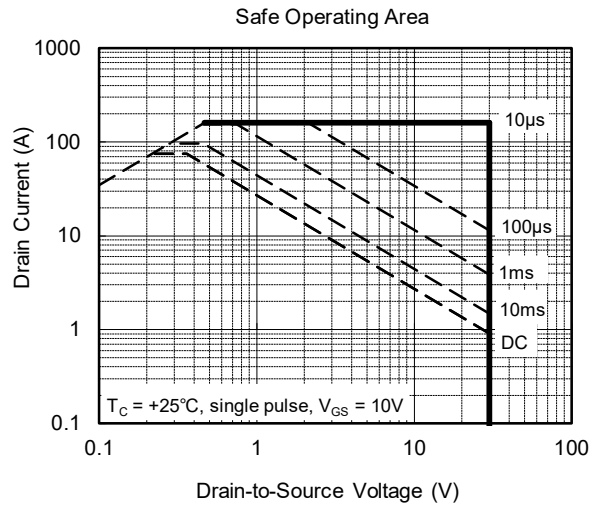
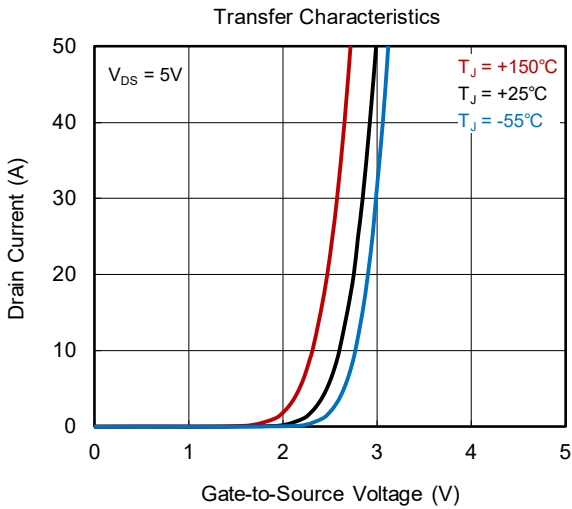
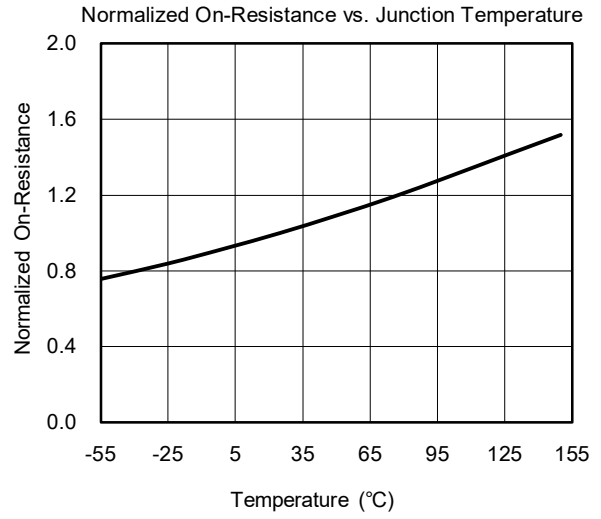
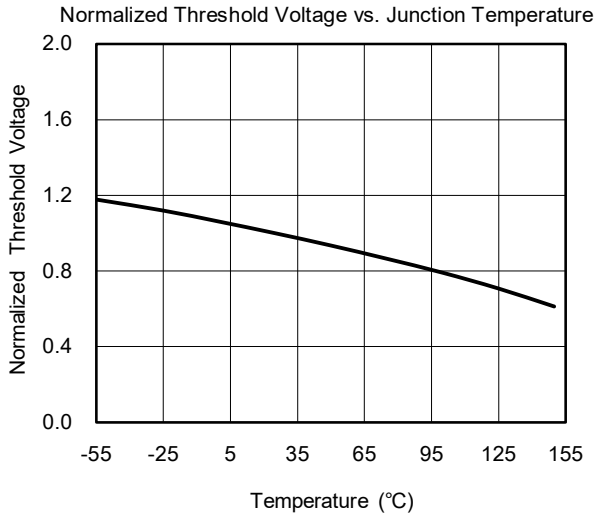
ELECTRICAL CHARACTERISTICS(T_A = +25°C, unless otherwise noted.)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Static OFF Characteristics						
Drain-to-Source Breakdown Voltage	V _{BR_DSS}	V _{GS} = 0V, I _D = 250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} = 0V, V _{DS} = 24V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Static ON Characteristics						
Gate-to-Source Threshold Voltage	V _{GS_TH}	V _{GS} = V _{DS} , I _D = 250μA	1.2	1.6	2.2	V
Drain-to-Source On-State Resistance	R _{DS(on)}	I _D = 30A 2.	V _{GS} = 10V	2.9	3.6	mΩ
			V _{GS} = 4.5V	4.6	6	
Forward Transconductance	g _{FS}	V _{DS} = 1.5V, I _D = 15A		31		S
Gate Resistance	R _G	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		2		Ω
Diode Characteristics						
Diode Forward Voltage	V _{F_SD}	V _{GS} = 0V, I _S = 10A		0.8		V
Reverse Recovery Time	t _{RR}	V _{GS} = 0V, I _S = 30A, di/dt = 100A/μs		53		ns
Reverse Recovery Charge	Q _{RR}			51		nC
Dynamic Characteristics						
Input Capacitance	C _{ISS}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		1028		pF
Output Capacitance	C _{OSS}			876		
Reverse Transfer Capacitance	C _{RSS}			57		
Total Gate Charge	Q _G	V _{DS} = 15V, I _D = 30A	V _{GS} = 10V	22.7		nC
			V _{GS} = 4.5V	11.6		
Gate-to-Source Charge	Q _{GS}	V _{GS} = 4.5V, V _{DS} = 15V, I _D = 30A		3.5		
Gate-to-Drain Charge	Q _{GD}			5		
Switch Characteristics						
Turn-On Delay Time	t _{D_ON}	V _{GS} = 10V, V _{DS} = 15V, I _D = 30A, R _G = 3Ω		5.2		ns
Rise Time	t _R			45		
Turn-Off Delay Time	t _{D_OFF}			19		
Fall Time	t _F			9.8		

TYPICAL PERFORMANCE CHARACTERISTICS



TYPICAL PERFORMANCE CHARACTERISTICS (continued)



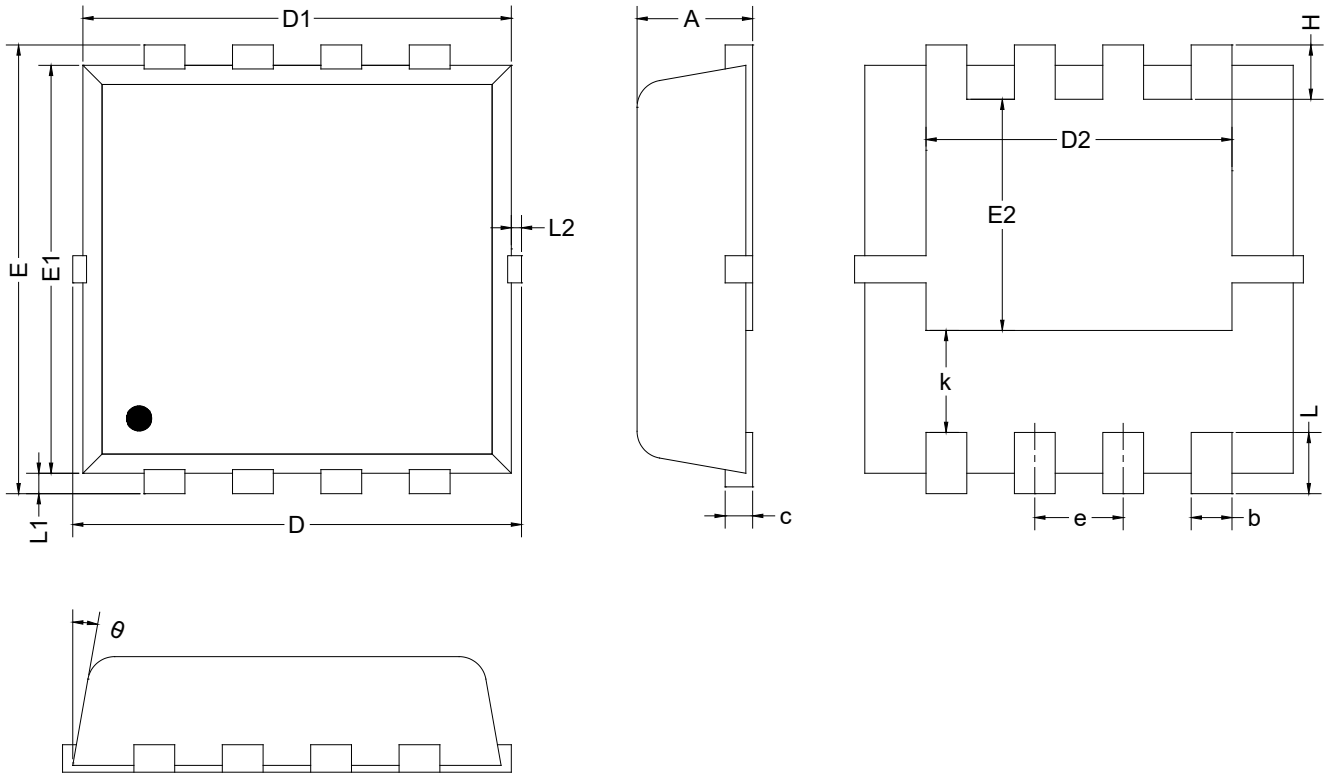
REVISION HISTORY

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

Changes from Original (NOVEMBER 2024) to REV.A	Page
Changed from product preview to production data.....	All

PACKAGE OUTLINE DIMENSIONS

PDFN-3.3×3.3-8L



Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	0.700	-	0.900
b	0.250	-	0.390
c	0.140	-	0.200
D	3.100	-	3.500
D1	3.050	-	3.250
D2	2.150	-	2.350
E	3.100	-	3.500
E1	2.900	-	3.100
E2	1.600	-	1.800
e	0.650 BSC		
H	0.250	-	0.550
k	0.650	-	0.850
L	0.300	-	0.600
L1	0.050	-	0.250
L2	-	-	0.150
θ	8°	-	12°

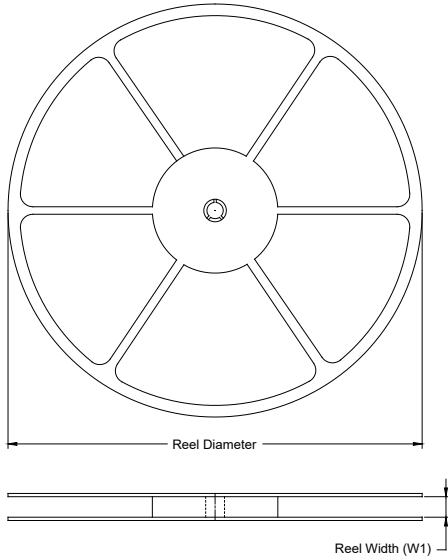
NOTES:

1. This drawing is subject to change without notice.
2. The dimensions do not include mold flashes, protrusions or gate burrs.

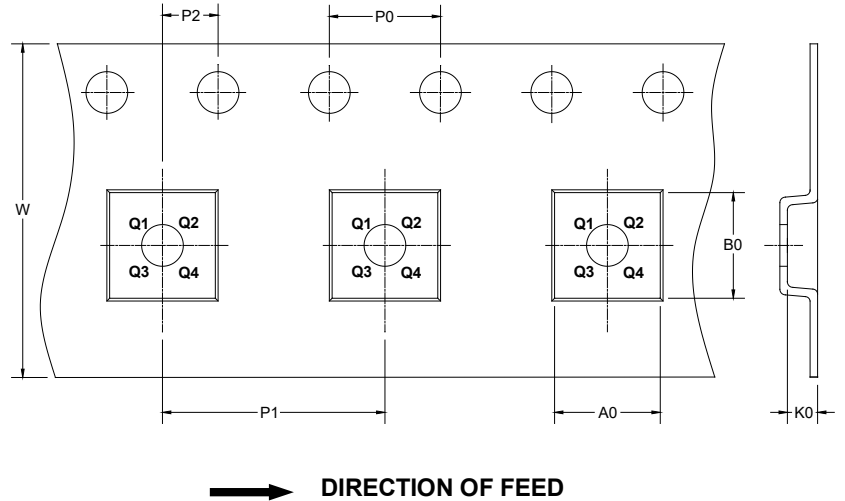
PACKAGE INFORMATION

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



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

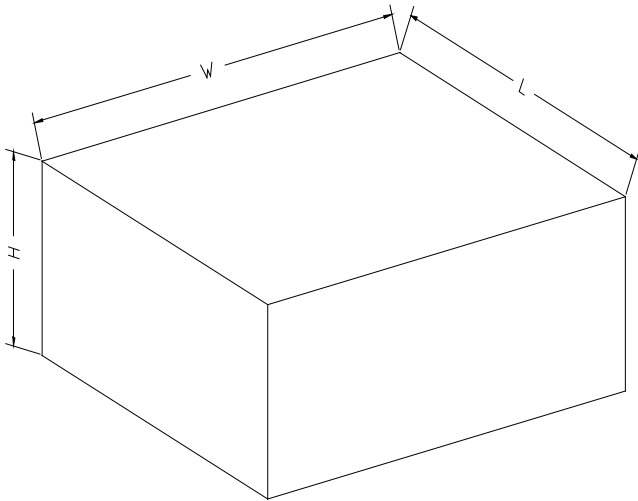
KEY PARAMETER LIST OF TAPE AND REEL

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-3.3×3.3-8L	13"	12.4	3.60	3.60	1.10	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