

MAIN CHARACTERISTICS

I_D	-100 A
V_{DSS}	-30 V
$R_{DS(on)-typ}$ (@ $V_{GS}=-10V$)	5m Ω

FEATURES

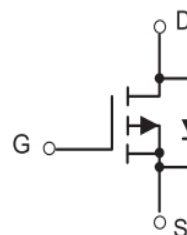
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge

APPLICATIONS

- Load Switch
- PWM Application
- Power Management

MECHANICAL DATA

- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275°C maximum, 10s per JESD 22-B106



PDFN5x6

Product specification classification

Part Number	Package	Mode Name	Pack
LT100P03AG	PDFN5x6	LT100P03AG	Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continue Drain Current	I_D	-100	A
Pulsed Drain Current (Note1)	I_{DM}	-400	A
Single Pulsed Avalanche Energy	E_{AS}	180	mJ
Power Dissipation	P_D	78	W
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.2	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	41	°C/W

Note1:Pulse test: 300 μ s pulse width, 2 % duty cycle

Electrical Characteristics at Tc=25°C unless otherwise specified

Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0 \text{ V}, I_D = -250 \mu\text{A}$	BV_{DSS}	-30	-	-	V
Drain-Source Leakage Current	$V_{DS} = -30 \text{ V}, V_{GS} = 0 \text{ V}$	I_{DSS}	-	-	-1	μA
Gate Leakage Current	$V_{GS} = \pm 20 \text{ V}, V_{DS} = 0 \text{ V}$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250 \mu\text{A}$	$V_{GS(th)}$	-1.1	-	-2.2	V
Drain-Source On-State Resistance	$V_{GS} = -10 \text{ V}, I_D = -20 \text{ A}$	$R_{DS(on)}$	-	5	6.5	m Ω
	$V_{GS} = -4.5 \text{ V}, I_D = -15 \text{ A}$		-	8.3	10	m Ω
Input Capacitance	$V_{DS} = -15 \text{ V}, V_{GS} = 0 \text{ V}, f = 1.0 \text{ MHz}$	C_{iss}	-	3500	-	pF
Output Capacitance		C_{oss}	-	520	-	pF
Reverse Transfer Capacitance		C_{rss}	-	456	-	pF
Turn-on Delay Time(Note2)	$V_{DS} = -15 \text{ V}, V_{GS} = -10 \text{ V}, R_G = 2.7 \Omega, I_D = -10 \text{ A}$	$t_{d(ON)}$	-	6.9	-	ns
Rise Time(Note2)		t_r	-	5.8	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	115	-	ns
Fall Time(Note2)		t_f	-	78	-	ns
Total Gate Charge(Note2)	$V_{DS} = -15 \text{ V}, V_{GS} = -10 \text{ V}, I_D = -10 \text{ A}$	Q_G	-	63	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	9.6	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	14	-	nC

Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

Parameter	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	-100	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	-400	A
Drain-Source Diode Forward Voltage	$V_{GS} = 0 \text{ V}, I_S = -30 \text{ A}, T_J = 25$	V_{SD}	-	-	-1.2	V
Reverse Recovery Time	$V_{GS} = 0 \text{ V}, I_S = -10 \text{ A}, di/dt = 100 \text{ A}/\mu\text{s}$	t_{rr}	-	21	-	ns
Reverse Recovery Charge		Q_{rr}	-	9.8	-	nC

Note2:Pulse test: 300 μ s pulse width, 2 % duty cycle

RATINGS AND CHARACTERISTIC CURVES

Figure 1: Power De-rating

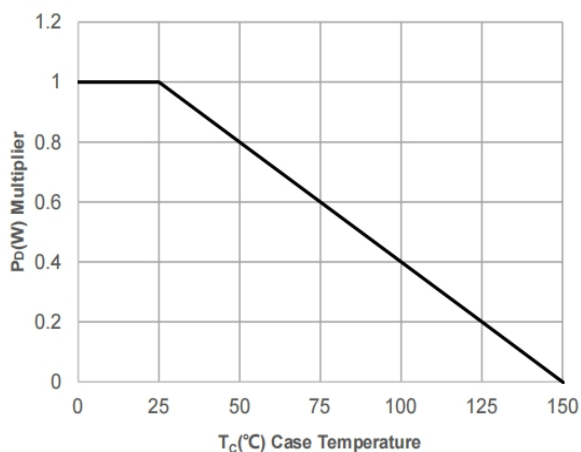


Figure 2: Current De-rating

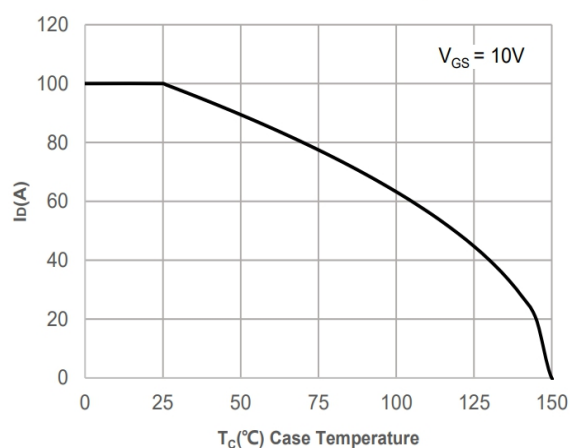


Figure 3: Normalized Maximum Transient Thermal Impedance

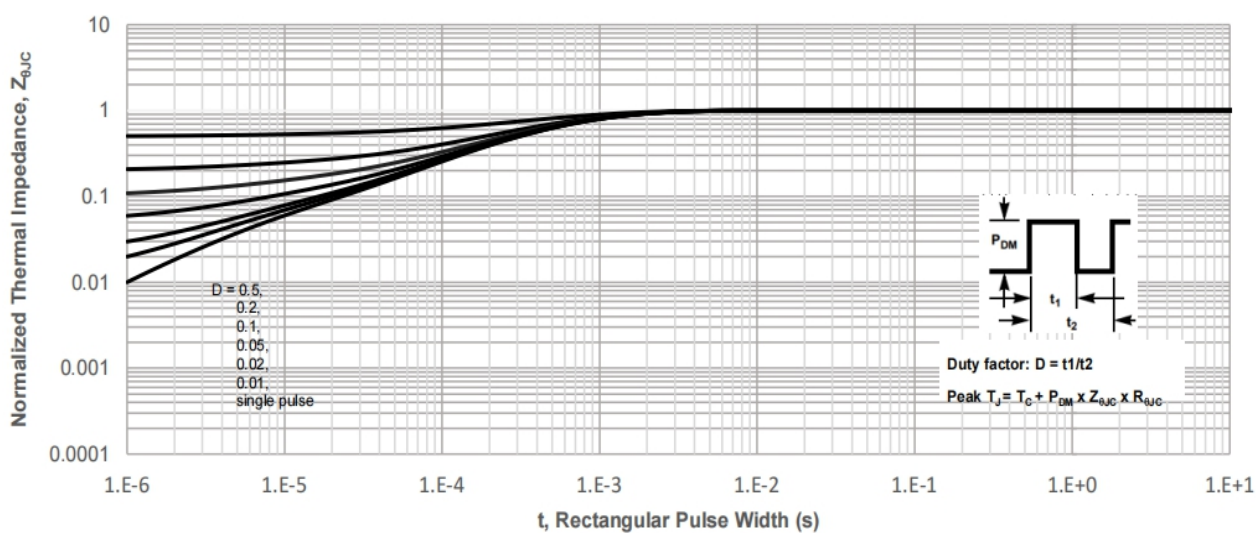
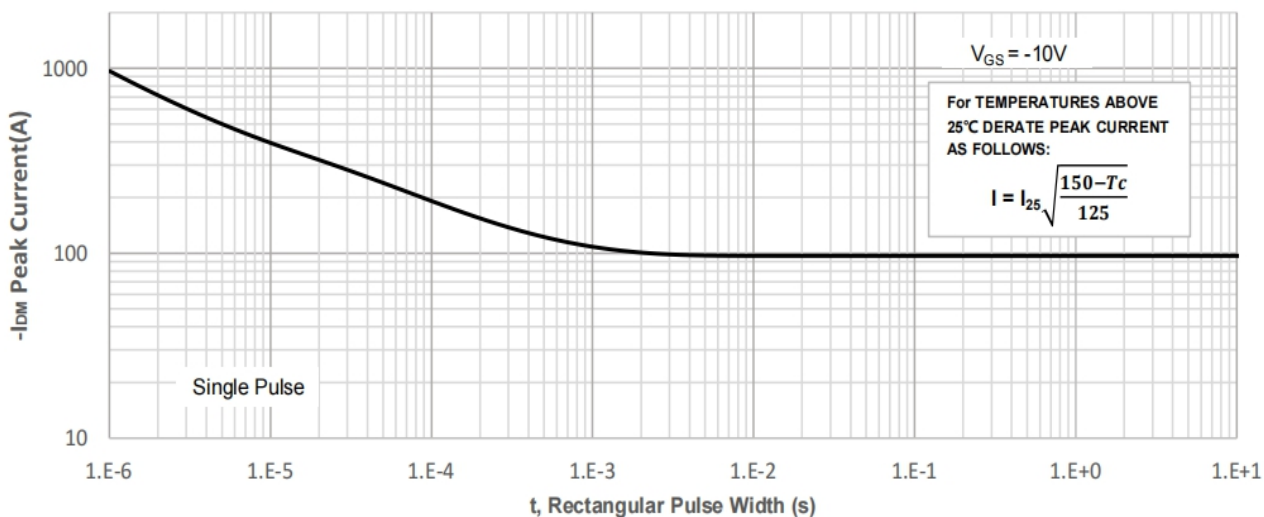


Figure 4: Peak Current Capacity



RATINGS AND CHARACTERISTIC CURVES

Figure 5: Output Characteristics

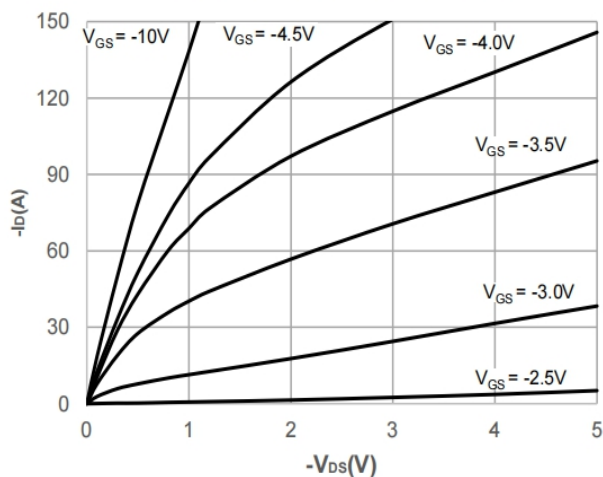


Figure 6: Typical Transfer Characteristics

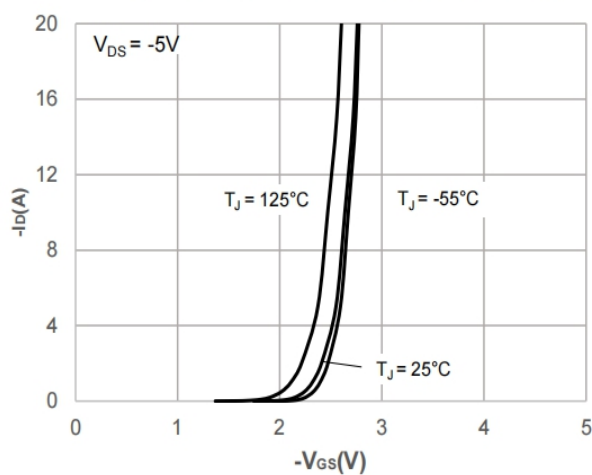


Figure 7: On-resistance vs. Drain Current

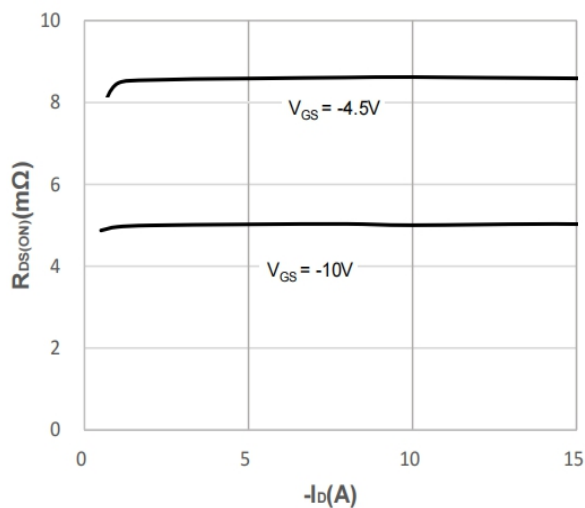


Figure 8: Body Diode Characteristics

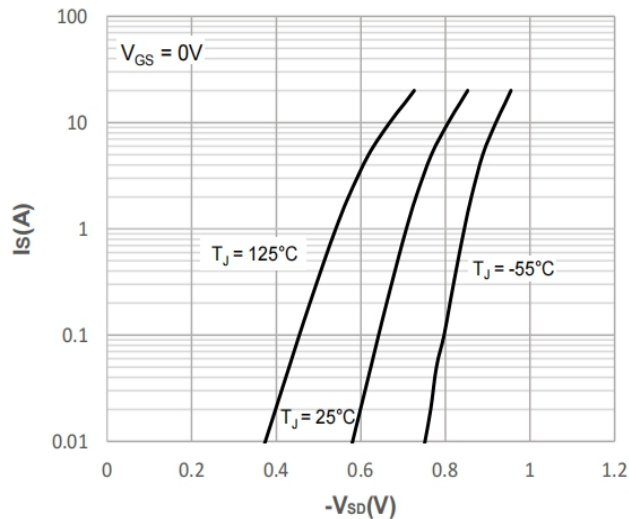


Figure 9: Gate Charge Characteristics

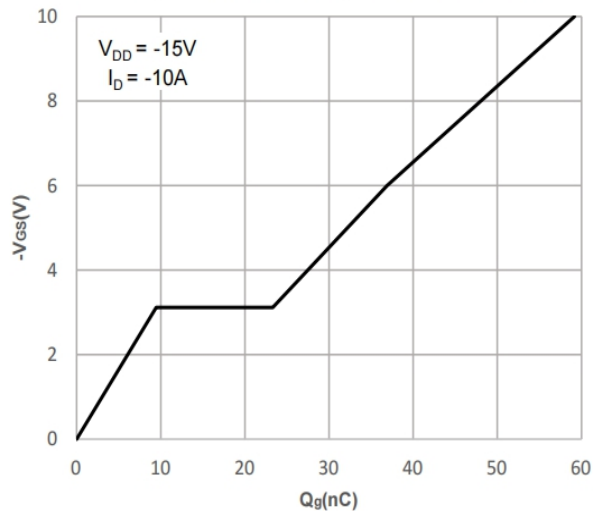
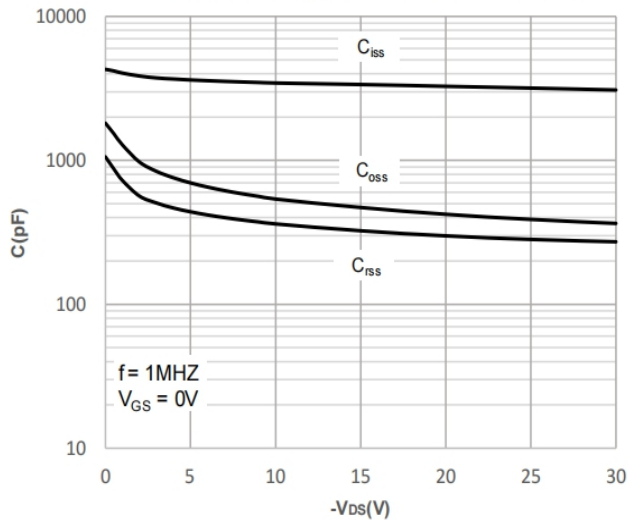


Figure 10: Capacitance Characteristics



RATINGS AND CHARACTERISTIC CURVES

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

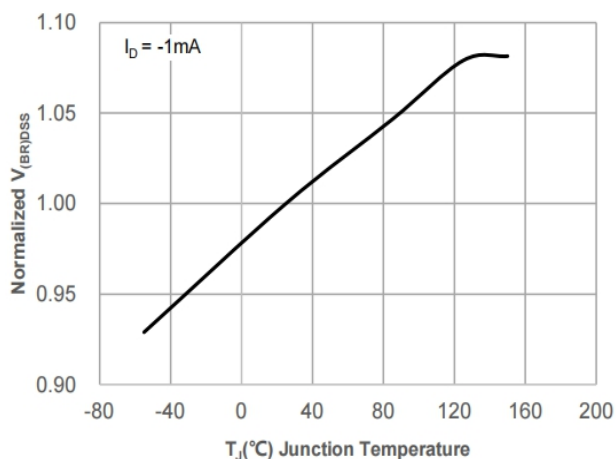


Figure 12: Normalized on Resistance vs. Junction Temperature

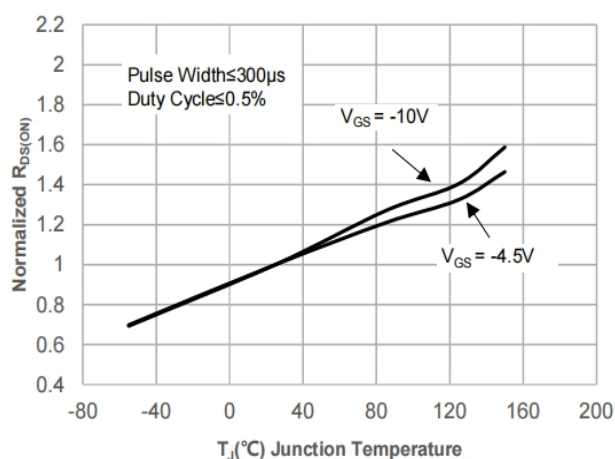


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

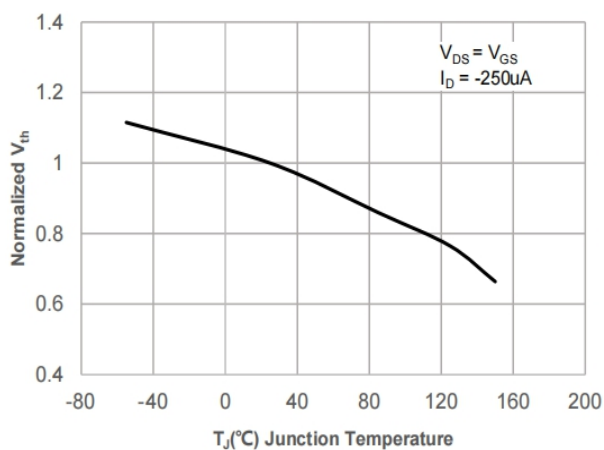


Figure 14: $R_{DS(ON)}$ vs. V_{GS}

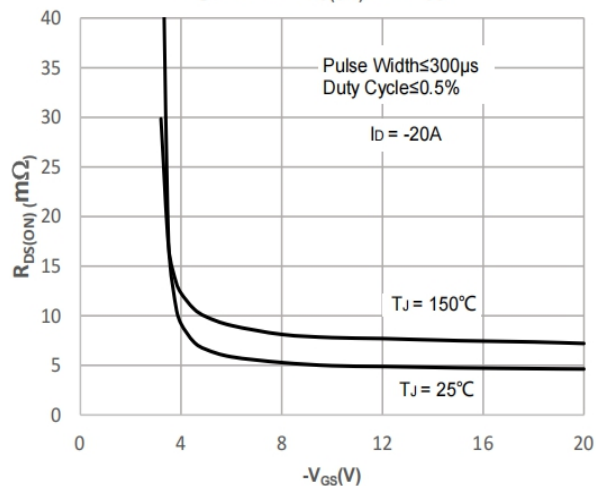
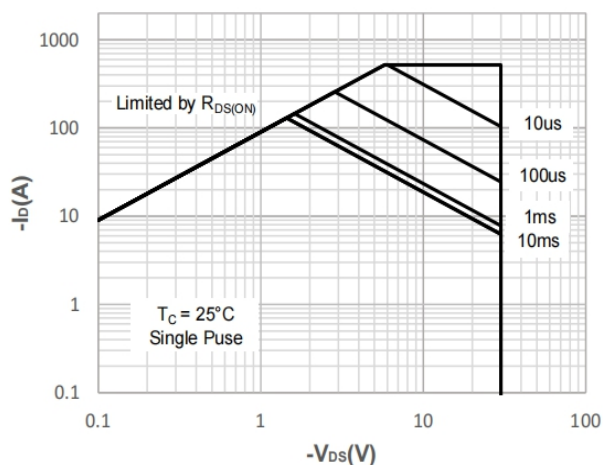
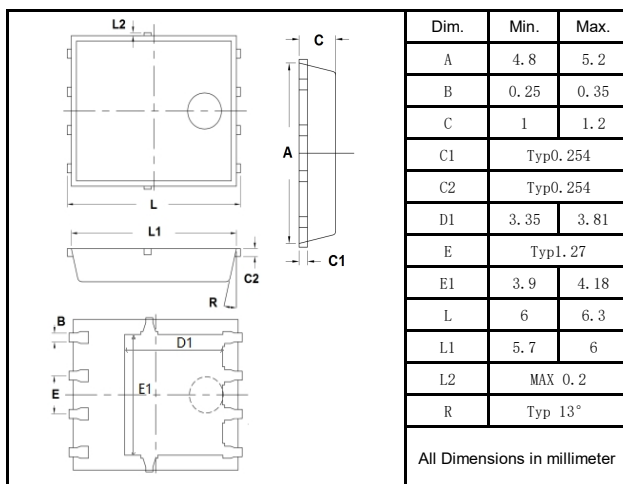


Figure 15: Maximum Safe Operating Area

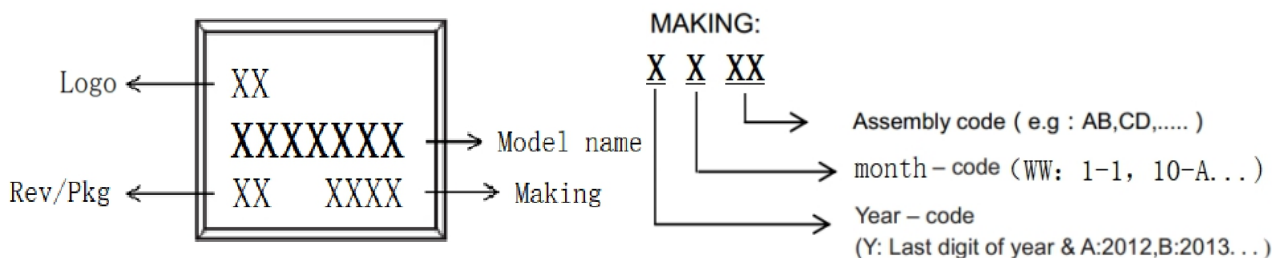


Package Outline Dimensions millimeters

PDFN5*6



Marking on the body



packing instruction

PKG	最小包装	内盒	外箱
PDFN5x6			
	5000pcs/盘	10000pcs/盒	50000pcs/箱

Notice

All product,product specifications and data are subject to change without notice to improve.The right to explain is owned by LINGXUN electronics company.

Confirm that operation temperature is within the specified range described in the product specification. Avoid applying poer exceeding normal ratedpoer; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.

LINGXUN electronics shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this documentpoer; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.