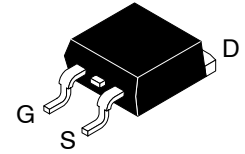
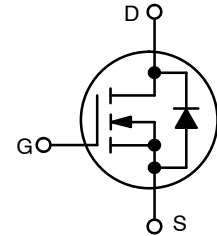


# S-LN98N15E2

## 150V N-Channel Power MOSFET



TO-263-2L



### 1. FEATURES

- Advanced trench cell design
- Low Thermal Resistance
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S-prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

### 2. APPLICATIONS

- Motor drivers
- DC-DC Converter

### 3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
S-LN98N15E2	98N15E2	

### 4. MAXIMUM RATINGS

Parameter	Symbol	Limits	Unit
Drain-to-Source Voltage	VDS	150	V
Gate-to-Source Voltage	VGS	±20	V
Continuous Drain Current TC = 25°C TC = 100°C	ID	115 82	A
Pulsed Drain Current(Note 2)	IDM	560	A
Avalanche Current(L=0.1mH)	IAS	36	A
Avalanche Energy, Single Pulse(L=0.1mH,TA=25° C)	EAS	65	mJ
Power Dissipation(TC = 25 °C)	PD	178	W
Operating and Storage Temperature Range	Tj/Tstg	-55~+150	°C

### 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Junction-to-Ambient(Note 1)	RθJA	45	°C/W
Junction-to-Case	RθJC	0.7	

Note:1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.

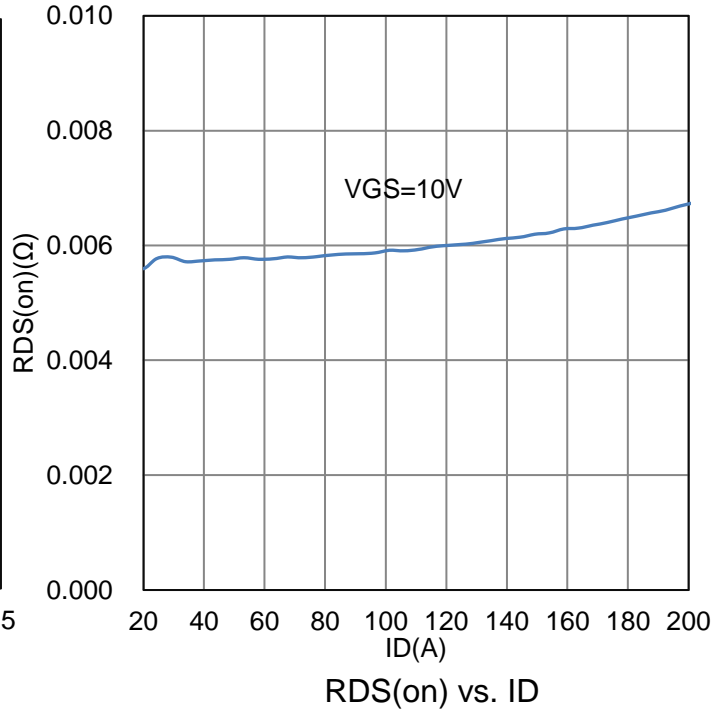
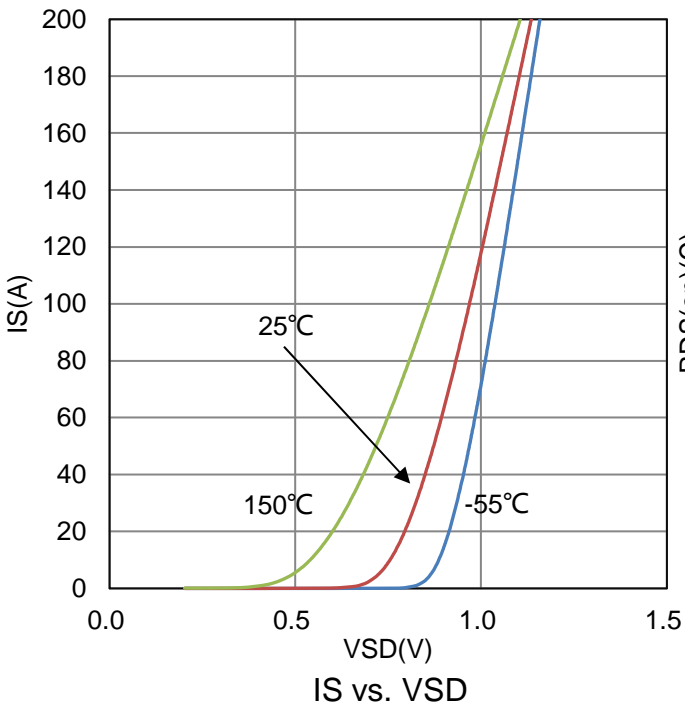
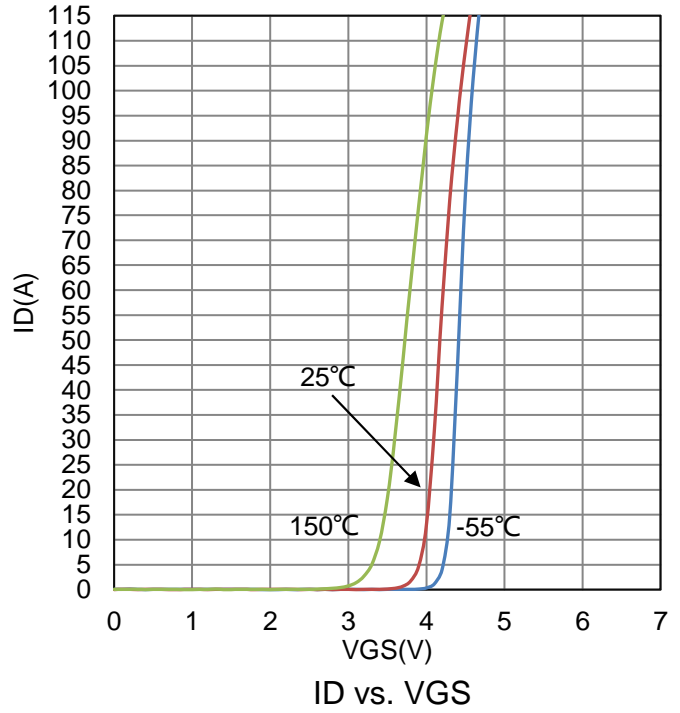
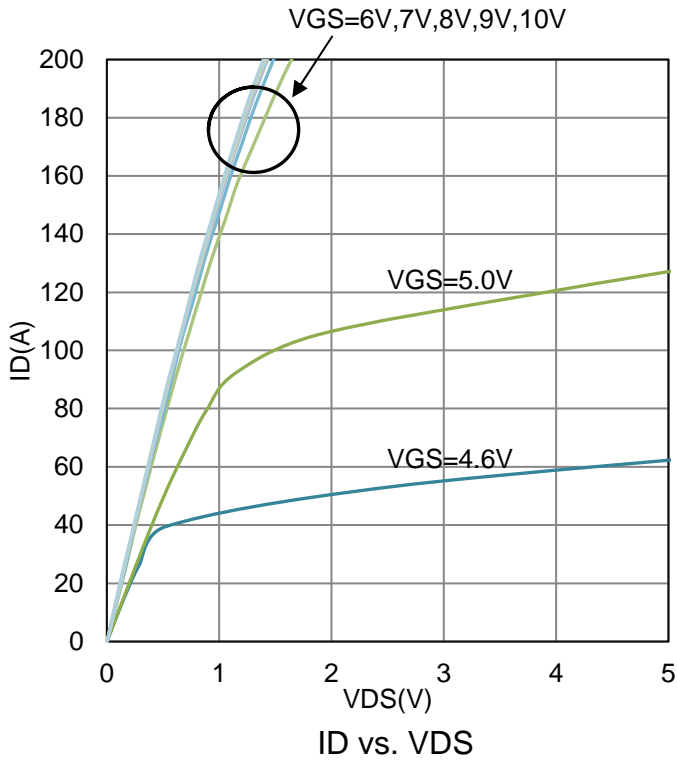
2.Pulse width limited by maximum junction temperature

**6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)**

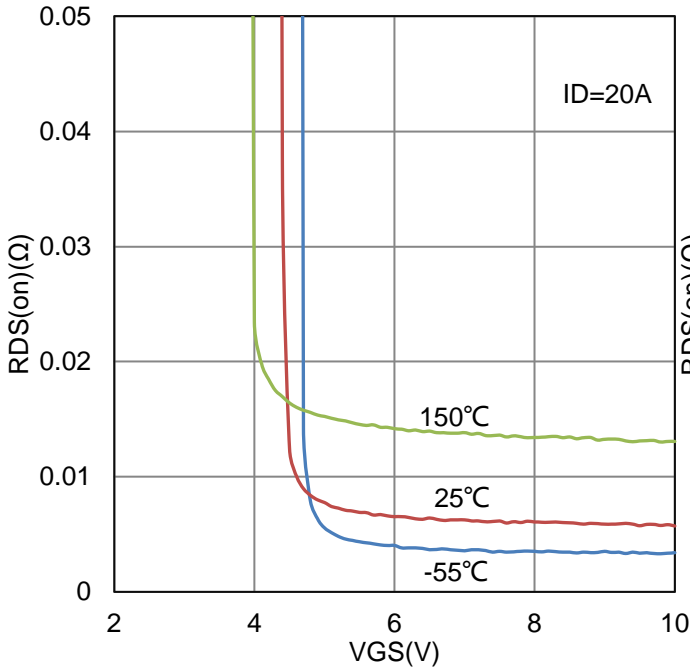
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
<b>STATIC</b>						
Drain to Source Breakdown Voltage (VGS = 0V, ID = 250μA)	VDSS	150	-	-	V	
Zero Gate Voltage Source Current (VDS = 150V, VGS = 0V)	IDSS	-	-	1	uA	
Gate to Source Leakage Current (VDS = 0V, VGS = ±20V)	IGSS	-	-	±100	nA	
Gate Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	2	3	4	V	
Drain-to-Source On-Resistance (VGS=10V, ID=20A)	RDS(ON)	-	6.2	7.6	mΩ	
<b>DYNAMIC</b>						
Input Capacitance	(VGS = 0V ,VDS = 75V, f = 100Hz)	Ciss	-	6328	-	pF
Output Capacitance		Coss	-	463	-	
Reverse Transfer Capacitance		Crss	-	11	-	
Turn-on Delay Time	(VDD = 75V, VG S = 10 V, RG = 10 Ω, ID= 20 A)	td(on)	-	50	-	nS
Rise Time		tr	-	56	-	
Turn-Off Delay Time		td(off)	-	150	-	
Fall Time		tf	-	63	-	
Total Gate Charge	(VDD = 75 V, ID = 20 A, VGS = 10 V)	Qg	-	83	-	nC
Gate to Source Charge		Qgs	-	29	-	
Gate to Drain Charge		Qgd	-	10	-	
Gate Resistance (VDS=0V, VGS=0V, f=1.0MHz)	Rg	-	4	-	Ω	
<b>Diode characteristics</b>						
Continuous Current TC =25° C	IS	-	-	115	A	
Plused Current TC =25° C	ISM	-	-	560	A	
Diode Forward Voltage (IS = 20 A, VGS = 0 V)	VSD	-	-	1.2	V	
Reverse Recovery Time (VR=75V, IF=13.2A, dIF/dt=100A/us)	trr	-	102	-	ns	
Reverse Recovery Charge (VR=75V, IF=13.2A, dIF/dt=100A/us)	Qrr	-	53	-	nC	
Reverse Recovery Current (VR=75V, IF=13.2A, dIF/dt=100A/us)	IRRM	-	10.2	-	A	

3. Pulse test: PW ≤ 300us duty cycle ≤ 2%.

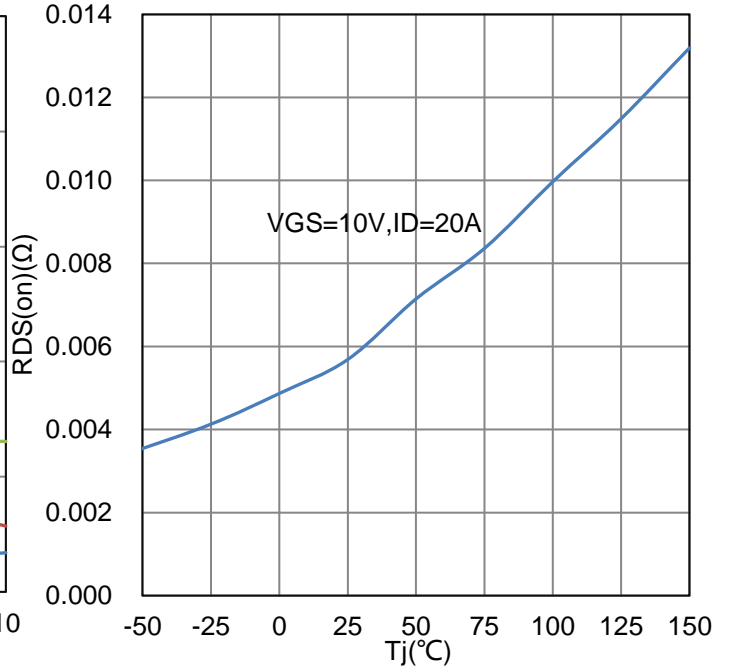
### 7. ELECTRICAL CHARACTERISTICS CURVES



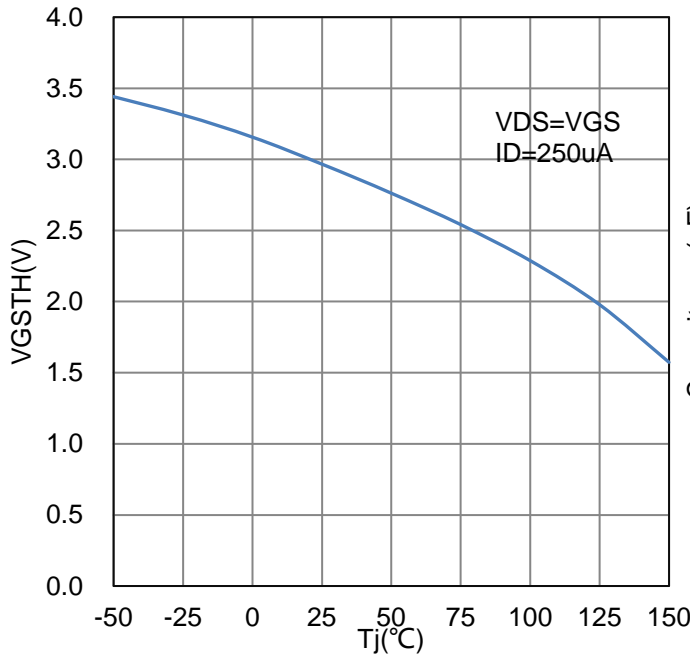
**7. ELECTRICAL CHARACTERISTICS CURVES(Con.)**



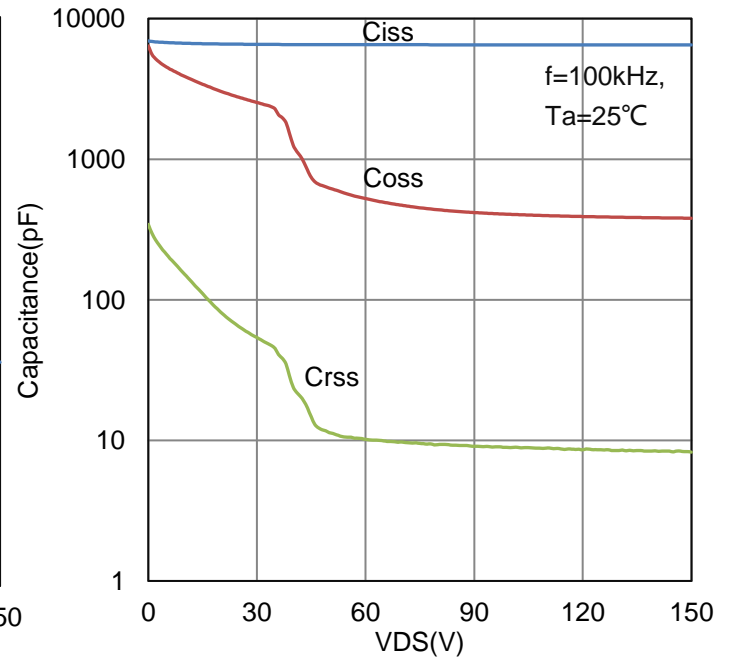
RDS(on) vs. VGS



RDS(on) vs. Tj

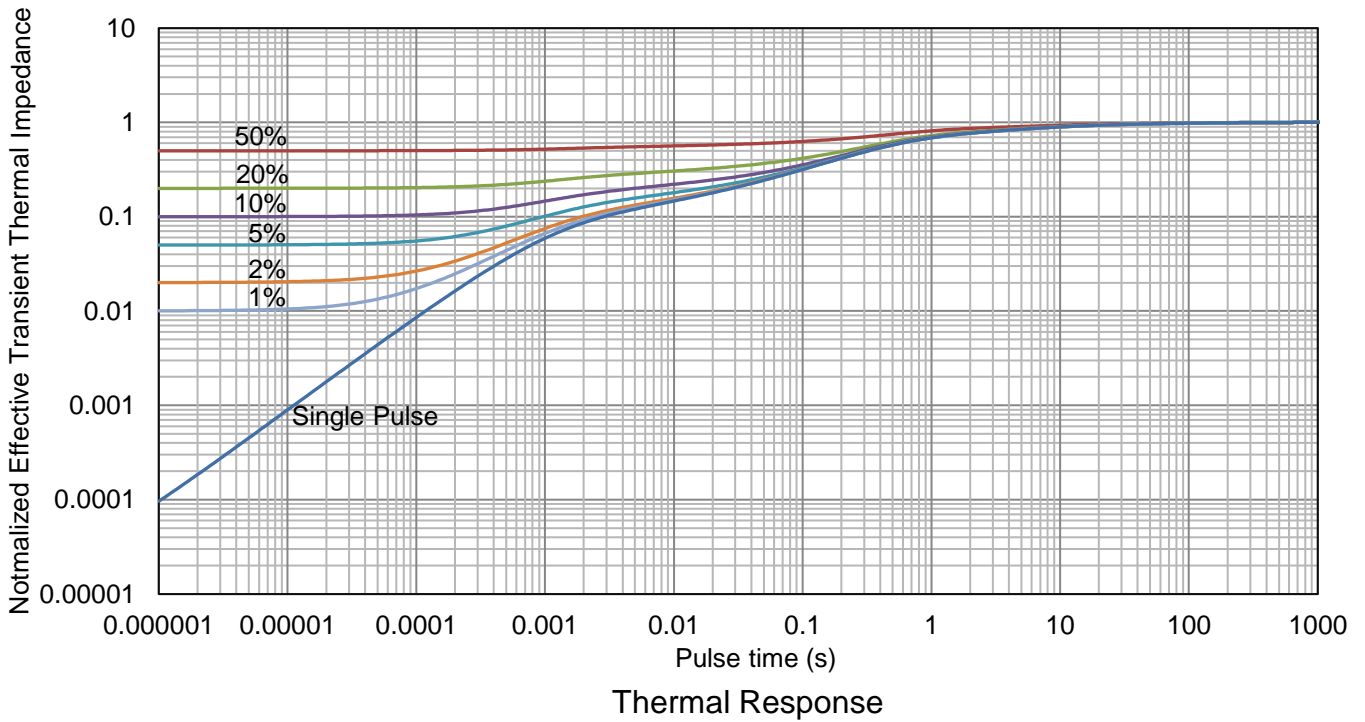
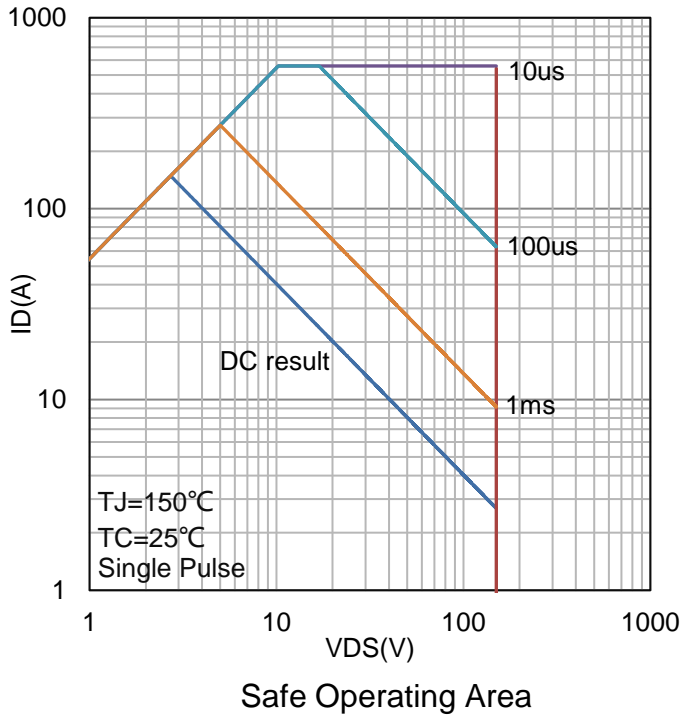


VGsth vs. Tj

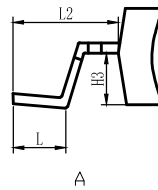
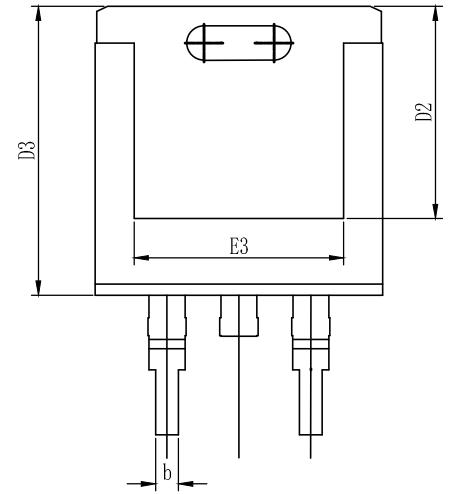
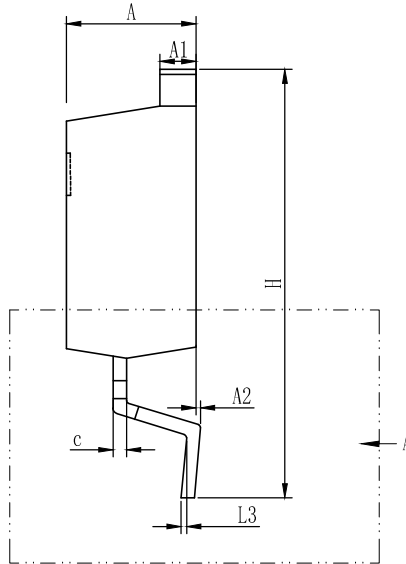
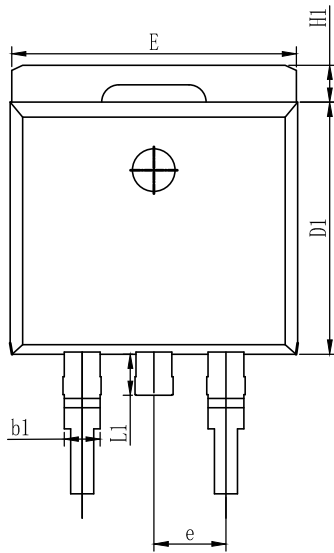


Capacitance

**7. ELECTRICAL CHARACTERISTICS CURVES(Con.)**



### 8. OUTLINE AND DIMENSIONS



DIM	MILLIMETERS		
	MIN	NOM	MAX
A	4.42	4.57	4.72
A1	1.20	1.30	1.40
A2	0.00	-	0.25
b	0.73	0.83	0.93
b1	1.20	1.30	1.40
c	0.41	0.48	0.58
D1	8.70	8.90	9.10
D2	7.20	-	-
D3	9.91	10.21	10.51
E	9.75	10.05	10.35
E3	7.10	-	7.70
e	2.54BSC		
H	14.84	15.14	15.44
H1	1.10	1.30	1.50
H3	2.35	2.45	2.55
L	2.18	2.48	2.78
L1	-	-	1.75
L2	4.69	4.99	5.29
L3	0.25BSC		

## **DISCLAIMER**

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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