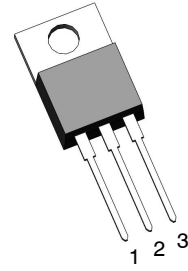


LN140N10AC

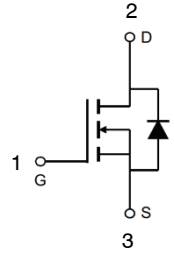
100V N-Channel Power MOSFET

1. FEATURES

- High Speed Power Switching.
- Enhanced Body diode dv/dt capability.
- Enhanced Avalanche Ruggedness.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.



TO220



2. APPLICATIONS

- Power Tools
- UPS
- Motor Control

3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	MOQ	Form
LN140N10AC	140N10AC	1000	Tube

4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain-to-Source Voltage	VDS	100	V
Gate-to-Source Voltage	VGS	±20	V
Continuous Drain Current TC = 25°C TC = 100°C	ID	140 89	A
Pulsed Drain Current(Note 2)	IDM	560	A
Avalanche Current	IAS	60	A
Avalanche Energy(L=0.1mH)	EAS	180	mJ
Power Dissipation(TC = 25°C) Power Dissipation(TC = 100°C)	PD	312.5 125	W
Operating and Storage Temperature Range	Tj/Tstg	-55~+150	°C

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-to-Ambient(Note 1)	RθJA	50	°C/W
Thermal Resistance Junction-to-Case	RθJC	0.4	

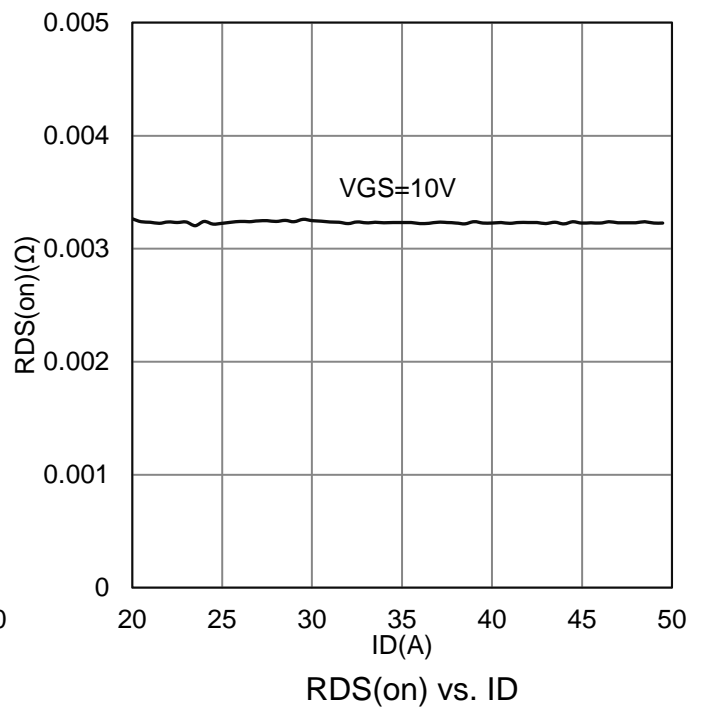
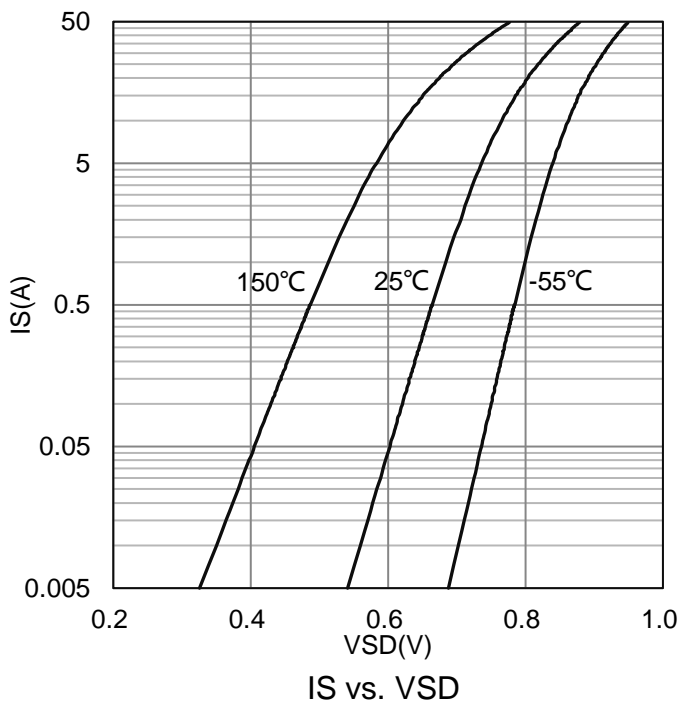
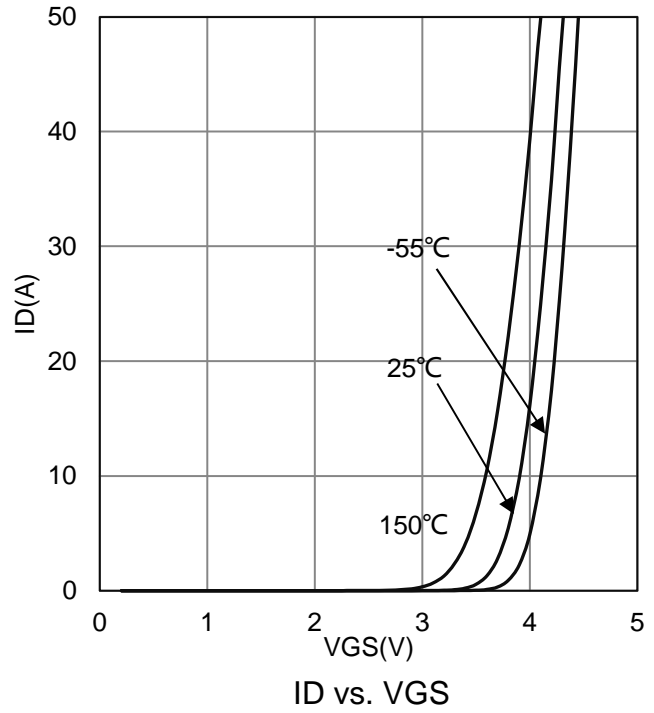
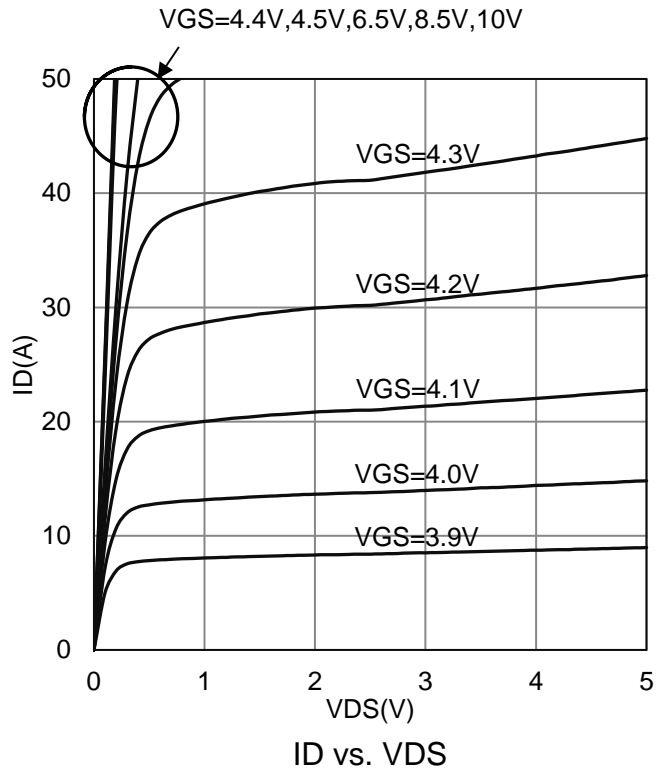
- 1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.
- 2.Pulse width limited by maximum junction temperature

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

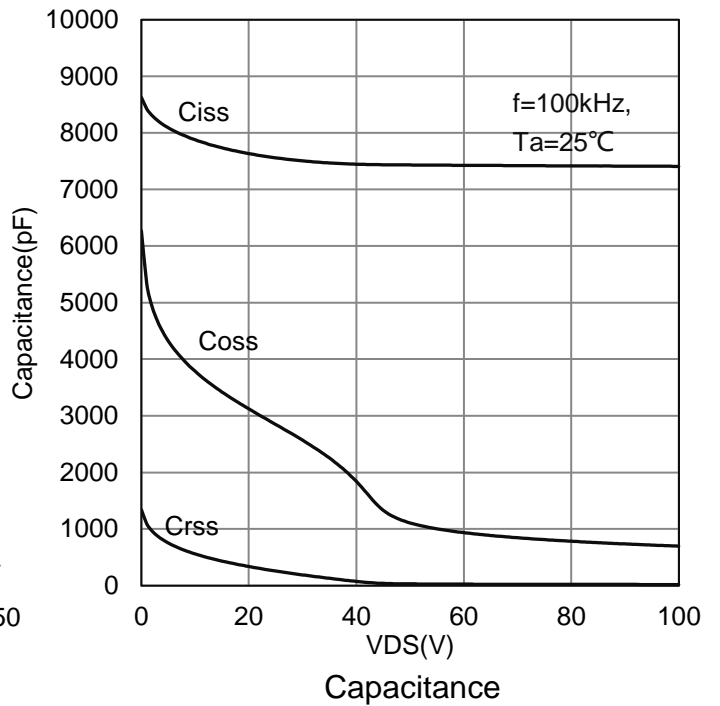
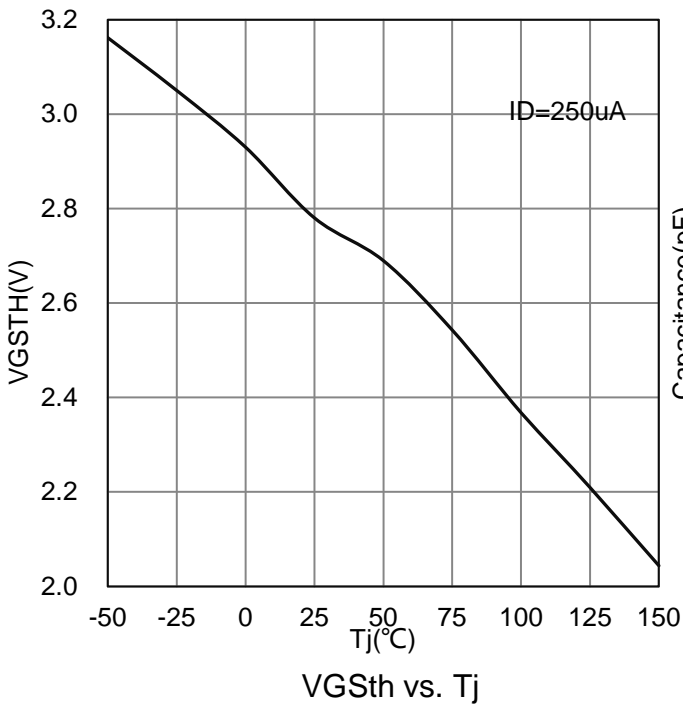
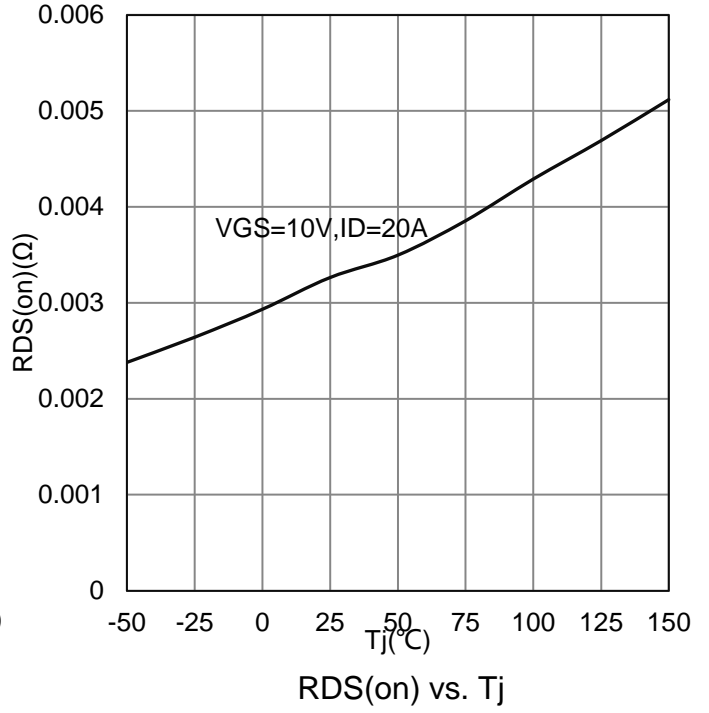
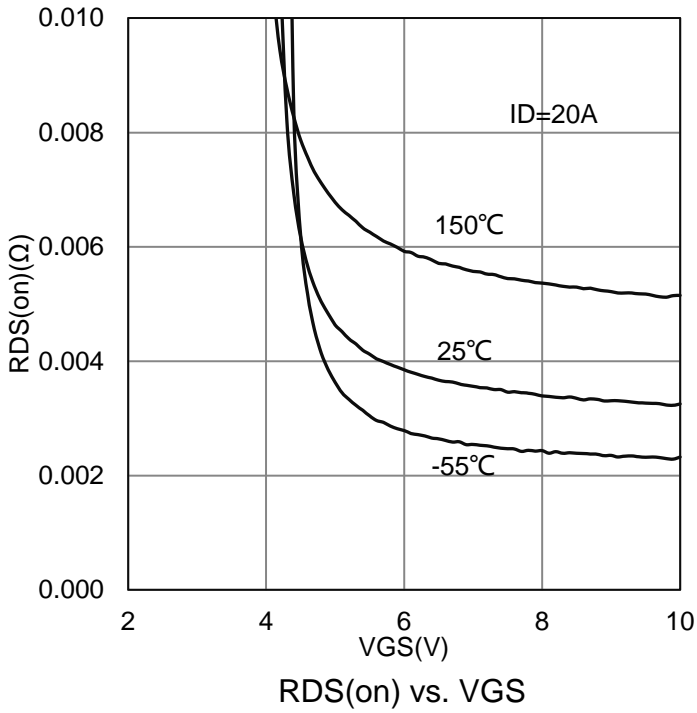
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Static						
Drain–Source Breakdown Voltage (VGS = 0 V, ID = 250 μA)	VBRDSS	100	-	-	V	
Gate Threshold Voltage (VDS = VGS, ID = 250 μA)	VGS(th)	2	3	4	V	
Gate-Body leakage current (VDS = 0 V, VGS = ±20 V)	IGSS	-	-	±100	nA	
Zero Gate Voltage Drain Current (VDS = 100 V, VGS = 0 V)	IDSS	-	-	1	μA	
Drain-to-Source On-Resistance (Note 3) (VGS = 10 V, ID = 20 A)	RDS(ON)	-	2.8	3.2	mΩ	
Diode Forward Voltage (IS = 20 A, VGS = 0 V)	VSD	-	0.9	1.2	V	
Dynamic						
Total Gate Charge	(VDS = 50 V, VGS = 10 V, ID = 20 A)	Qg	-	110	-	nC
Gate to Source Charge		Qgs	-	27.5	-	
Gate to Drain Charge		Qgd	-	25.5	-	
Turn-on Delay Time	(VDS = 50 V, ID = 20 A, VGS = 10 V, RG = 10Ω)	td(on)	-	41	-	nS
Rise Time		tr	-	51	-	
Turn-Off Delay Time		td(off)	-	139	-	
Fall Time		tf	-	72	-	
Input Capacitance	(VDS = 50 V, VGS = 0 V, f = 100kHz)	Ciss	-	7540	-	pF
Output Capacitance		Coss	-	1110	-	
Reverse Transfer Capacitance		Crss	-	30	-	
Gate Resistance (VDS = 0 V, VGS = 0 V, f = 1.0MHz)	Rg	-	0.4	-	Ω	

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

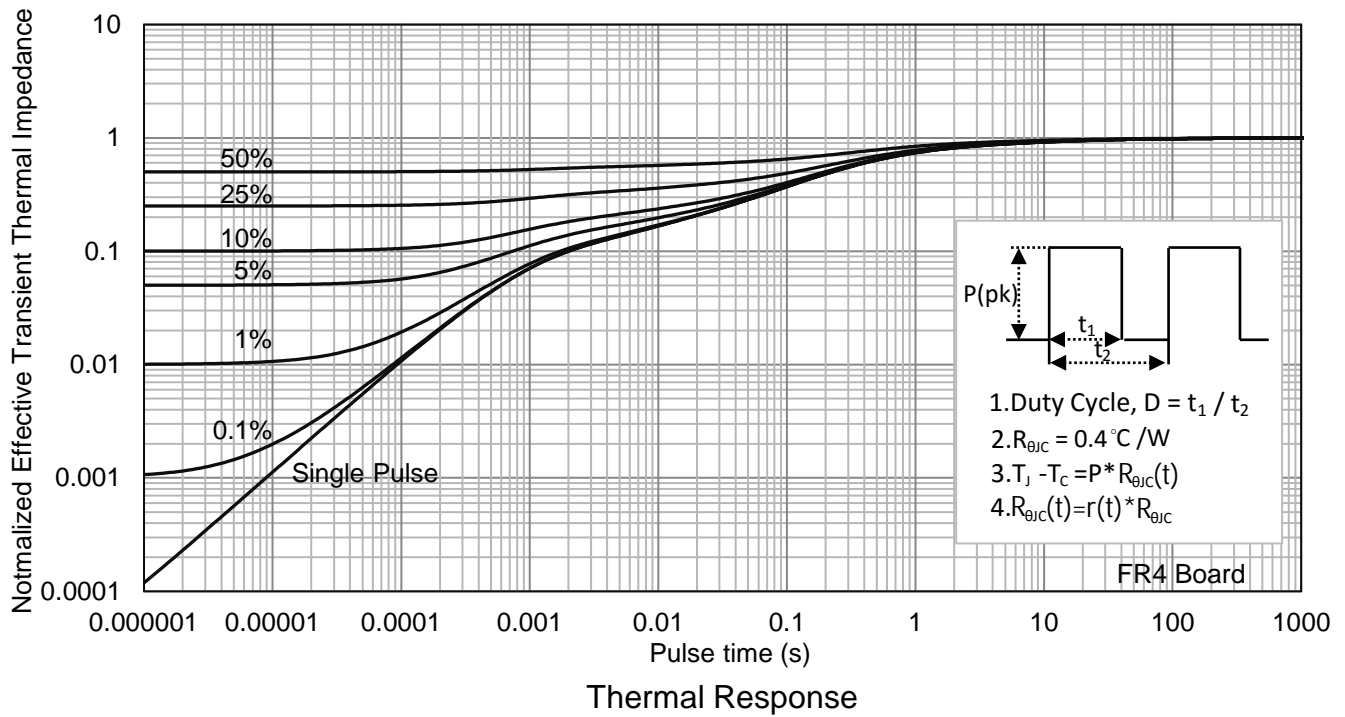
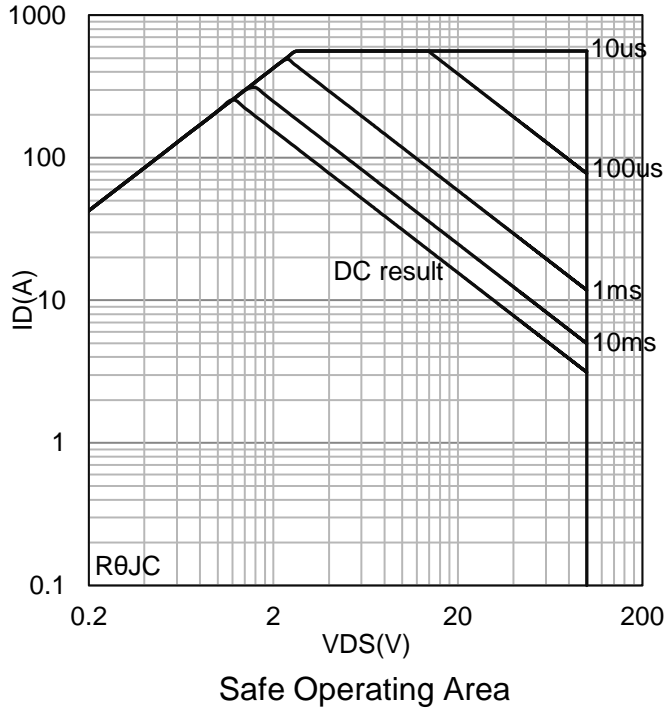
7. ELECTRICAL CHARACTERISTICS CURVES



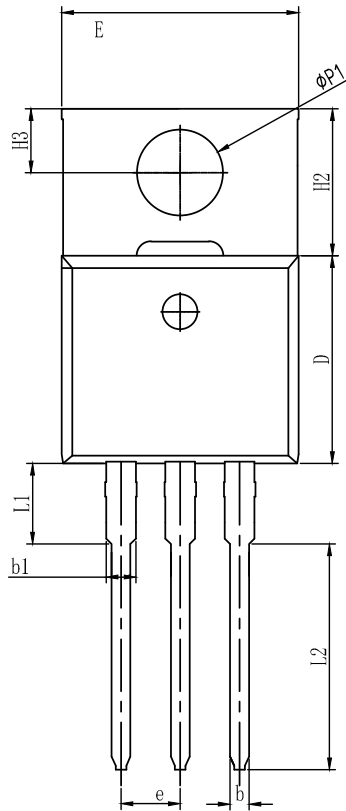
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



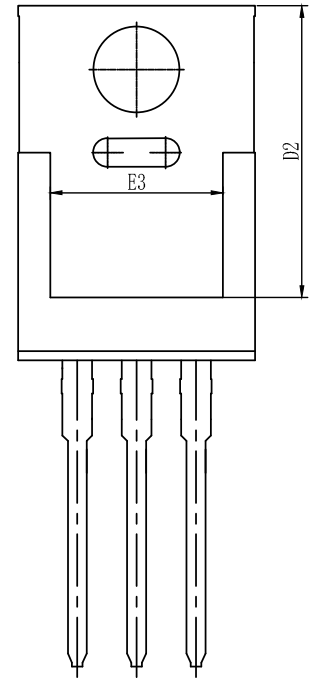
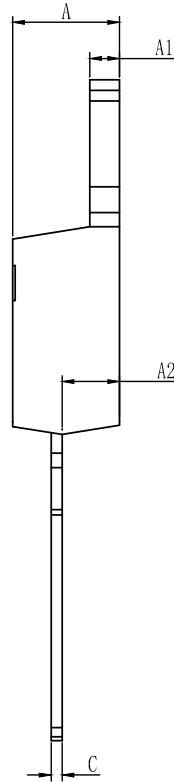
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8.OUTLINE AND DIMENSIONS



TOP VIEW



BOTTOM VIEW

GENERAL NOTES

1. Top package surface finish Ra Max1.2±0.2um
2. Bottom package surface finish Ra Max0.2um
3. Protrusion or Gate Burrs shall not exceed 0.05mm per side.
4. Off center Max0.05mm; Mismatch Max 0.05mm.

DIM	MILLIMETERS		
	MIN	NOM	MAX
A	4.42	4.57	4.72
A1	1.20	1.30	1.40
A2	2.35	2.45	2.55
b	0.73	0.83	0.93
b1	1.20	1.30	1.40
c	0.41	0.48	0.58
D	8.70	8.90	9.10
D2	12.20	12.50	12.80
E	9.85	10.15	10.45
E3	7.10	7.40	7.70
e	2.54BSC		
H2	6.10	6.30	6.50
H3	2.54	2.74	2.94
L1	3.16	3.46	3.76
L2	9.36	9.66	9.96
ØP1	3.48	3.68	3.88

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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