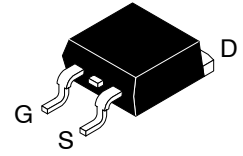
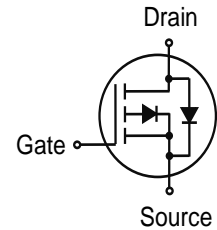


# S-LP98N06E2

## 60V P-Channel Power MOSFET



TO263-2L



### 1. FEATURES

- Low Thermal Resistance.
- Fast switching.
- 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

- Power Supply

### 3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
S-LP98N06E2	98N06E2	800/Tape&Reel

### 4. MAXIMUM RATINGS

Parameter		Symbol	Limits	Unit	
Drain-to-Source Voltage		VDS	-60	V	
Gate-to-Source Voltage		VGS	± 20	V	
Continuous Drain Current	TC=25°C	ID	-98	A	
	TC=100°C		-62.5		
Pulsed Drain Current (Note 2)		TC=25°C	IDM	-392	A
Avalanche Current		IAS	26	A	
Avalanche Energy(L=1mH)		EAS	338	mJ	
Power Dissipation	TC=25°C	PD	131	W	
	TC=100°C		52		
Operating Junction and Storage Temperature Range		Tj/Tstg	-55~+150	°C	

### 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Junction-to-Ambient(Note 1)	RθJA	40	°C/W
Junction-to-Case	RθJC	0.95	

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

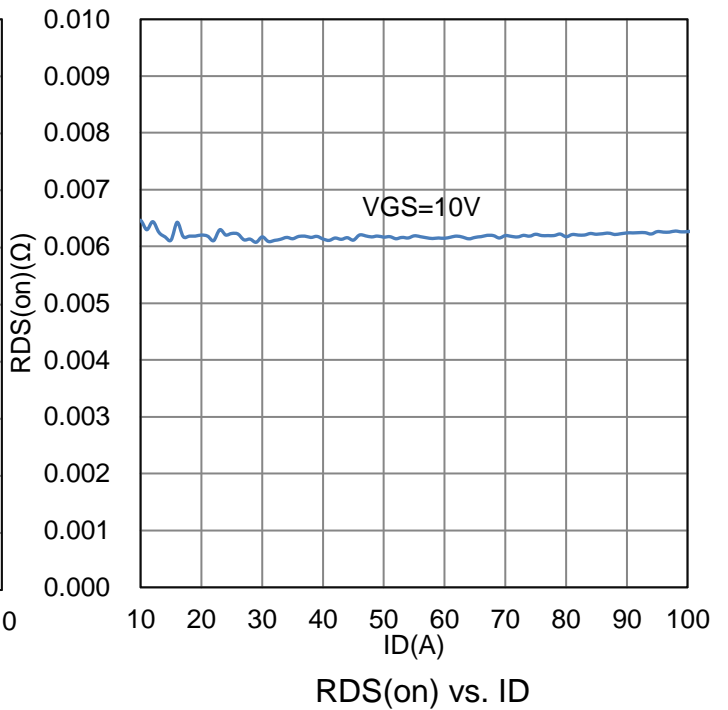
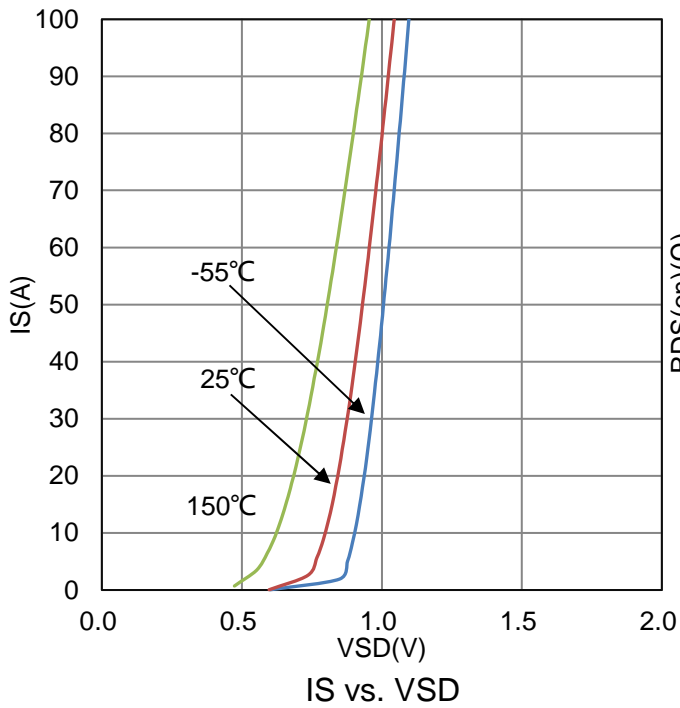
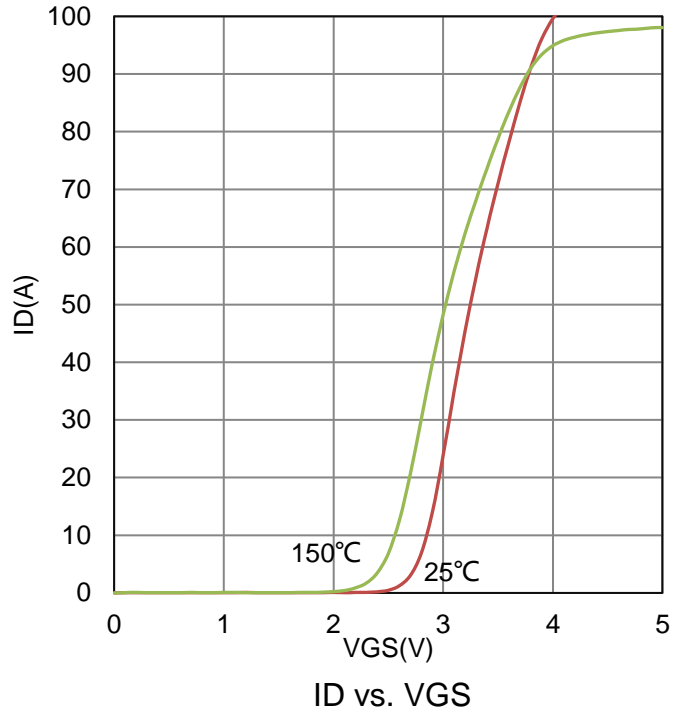
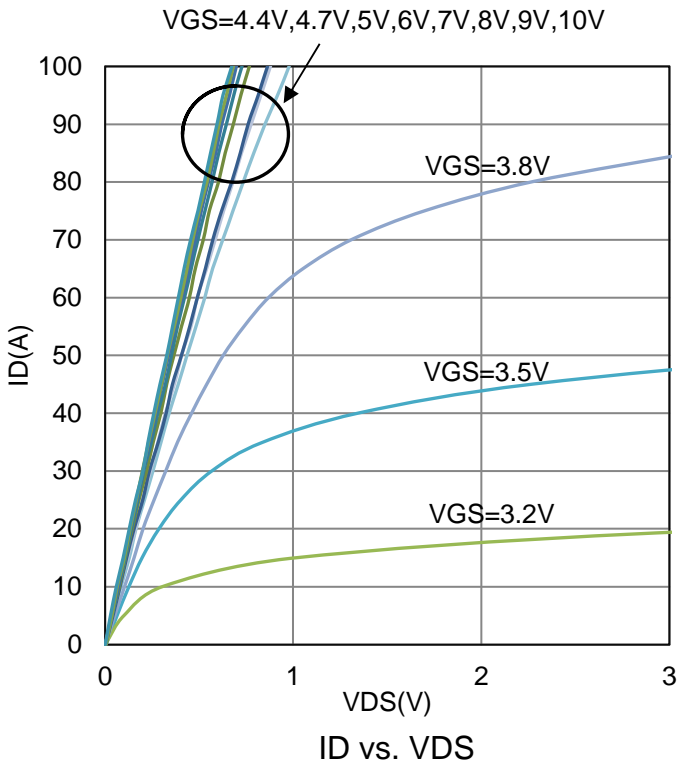
2.Pulse width limited by maximum junction temperature.

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

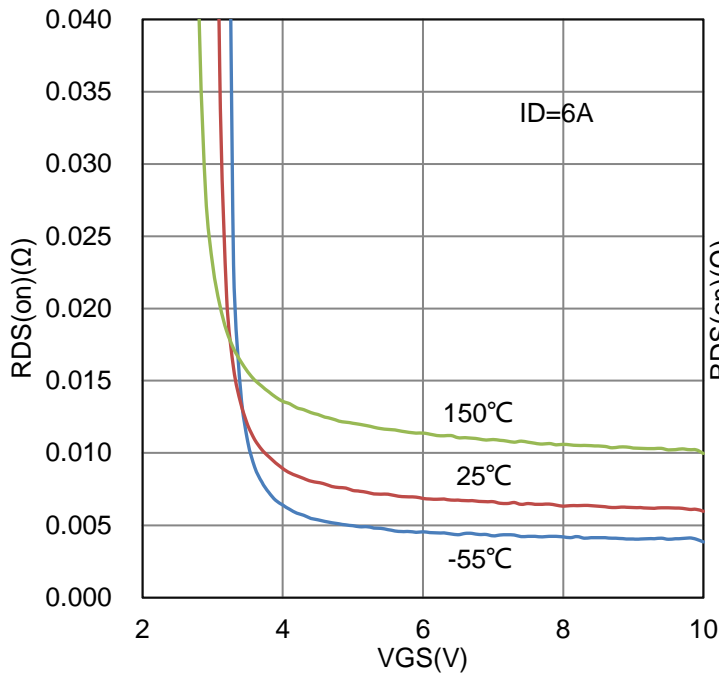
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
<b>Static</b>						
Drain to Source Breakdown Voltage (VGS = 0 V, ID = -250 μA)	BVDSS	-60	-	-	V	
Gate Threshold Voltage (VDS = VGS, ID = -250 μA)	VGS(th)	-1.6	-2	-2.4	V	
Gate-Body leakage current (VDS = 0 V, VGS = ±20 V)	IGSS	-	-	± 100	nA	
Zero Gate Voltage Drain Current (VDS = -60 V, VGS = 0 V)	IDSS	-	-	-1	μA	
Drain-to-Source On-Resistance(Note 3) (VGS = -10 V, ID = -6 A)	RDS(ON)	-	5.5	7	mΩ	
Diode Forward Voltage (IS = -2 A, VGS = 0 V)	VSD	-	-0.7	-1.2	V	
<b>Dynamic</b>						
Total Gate Charge	(VDS = -30 V, VGS = -4.5 V, ID = -6 A)	Qg	-	42	-	nC
Gate to Source Charge		Qgs	-	14	-	
Gate to Drain Charge		Qgd	-	14.5	-	
Turn-on Delay Time	(VDD= -30 V, RL = 5 Ω, ID= -6 A, VGEN= -10 V RGEN = 6 Ω)	td(on)	-	28	-	nS
Rise Time		tr	-	21	-	
Turn-Off Delay Time		td(off)	-	145	-	
Fall Time		tf	-	51	-	
Input Capacitance	(VDS = -30 V, VGS = 0 V, f = 100KHz)	Ciss	-	5485	-	pF
Output Capacitance		Coss	-	916	-	
Reverse Transfer Capacitance		Crss	-	57	-	
Gate Resistance (VDS = 0 V, VGS = 0 V, f = 1.0MHz)	Rg	-	2.2	-	Ω	

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

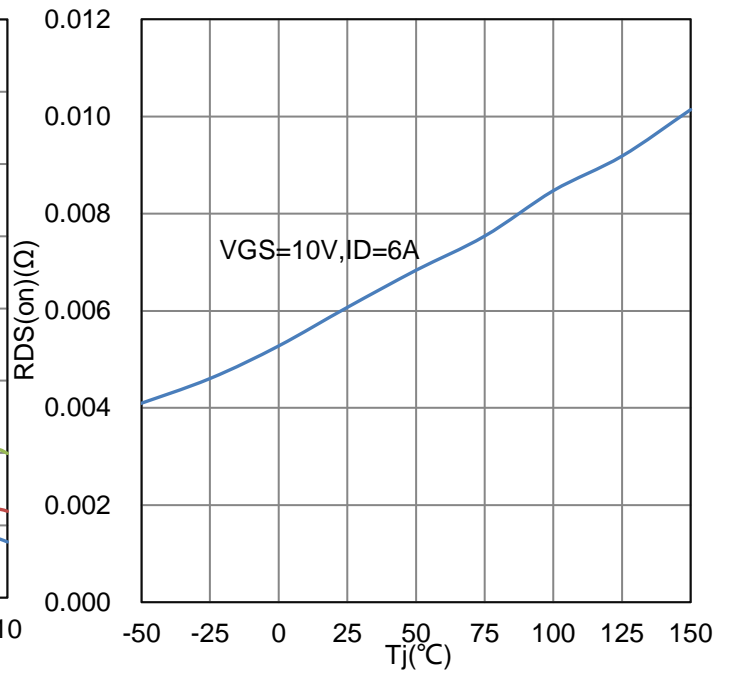
### 7. ELECTRICAL CHARACTERISTICS CURVES



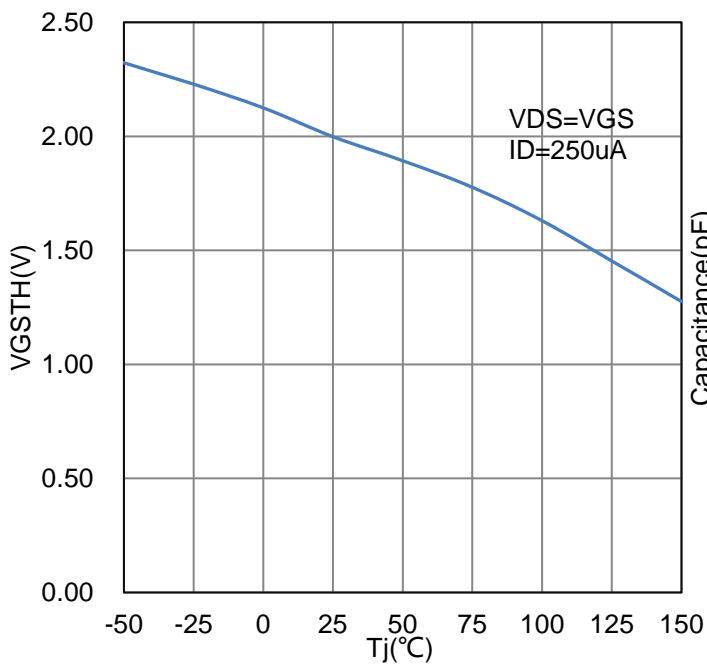
### 7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



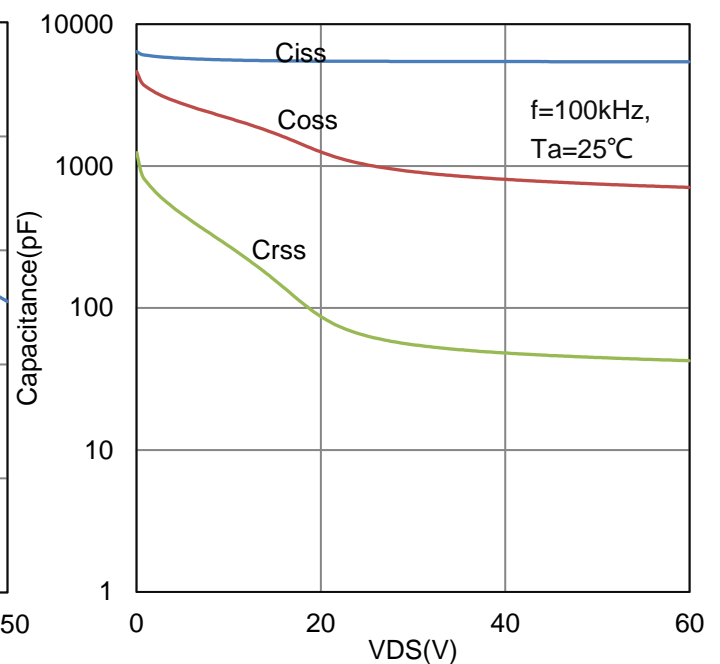
$R_{DS(on)}$  vs.  $V_{GS}$



$R_{DS(on)}$  vs.  $T_j$

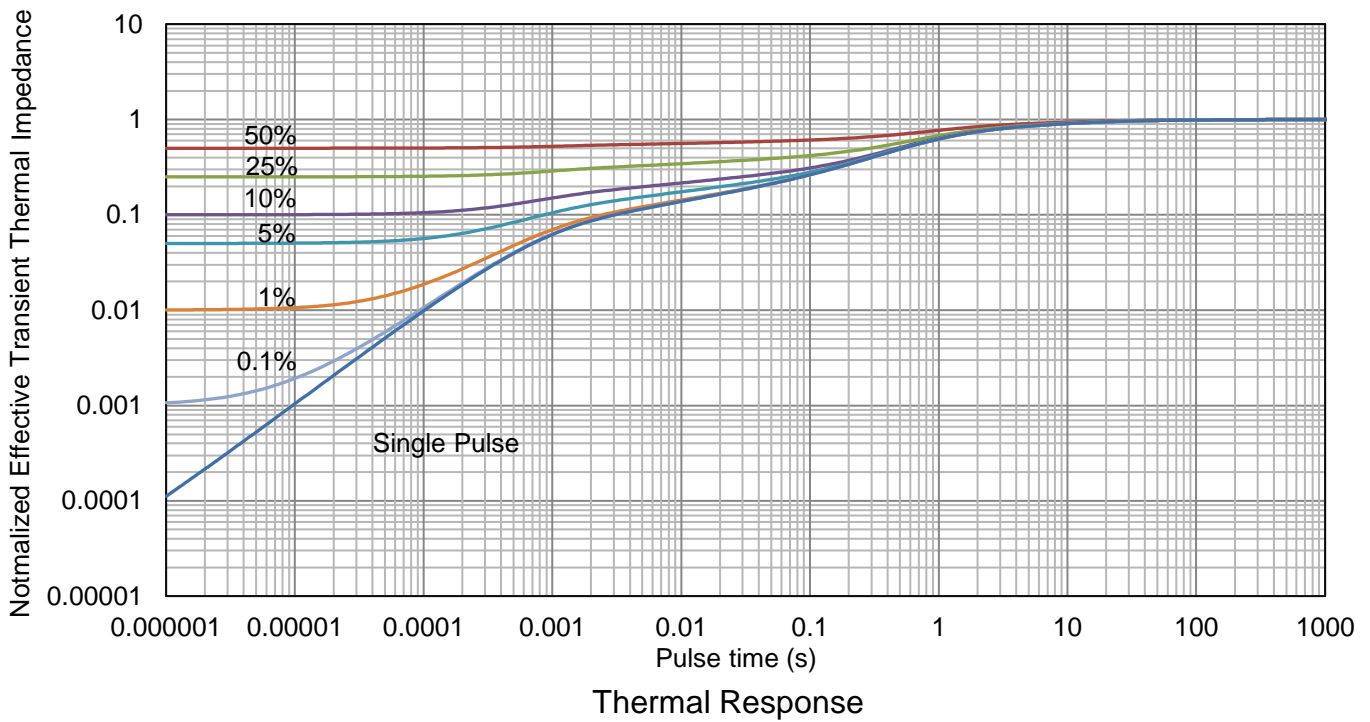
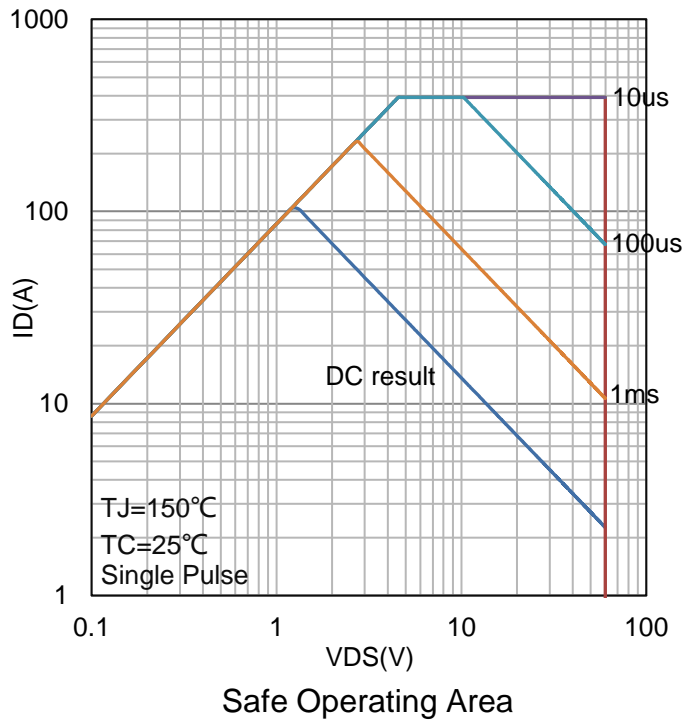


$V_{Gsth}$  vs.  $T_j$



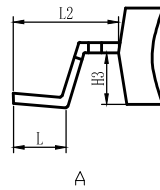
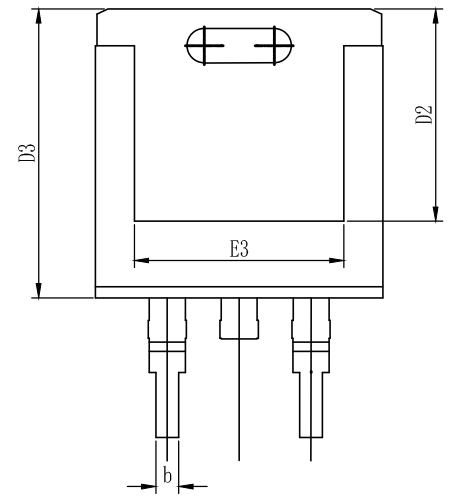
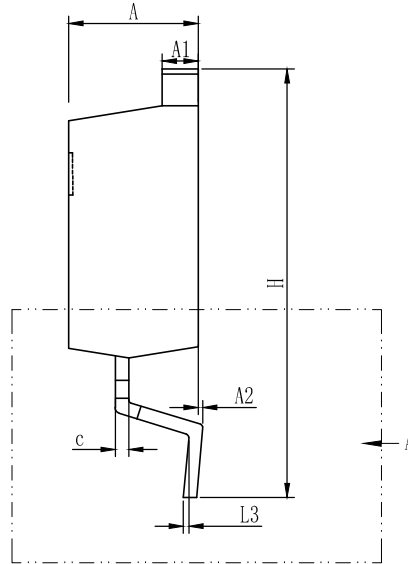
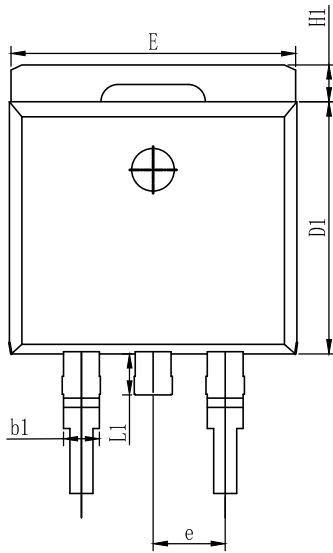
Capacitance

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



**7.OUTLINE AND DIMENSIONS**

T0263-2L



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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