

### Features

- Fast switching
- Low gate charge
- Low reverse transfer capacitances

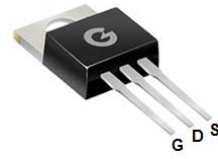
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### Typical Applications

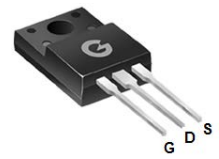
- Power switch circuit of adaptor and charger

### Mechanical Data

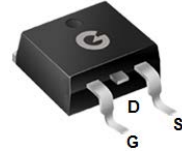
- Case: TO-220AB, ITO-220AB, TO-263
- Molding Compound, UL Flammability Classification Rating 94V-0.
- Terminals: Matte Tin Plated Leads, Solderable Per MIL-STD-202, Method 208



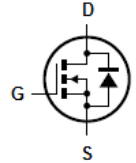
BL10N60  
TO-220AB



BL10N60F  
ITO-220AB



BL10N60B  
TO-263



### Ordering Information

Part Number	Package	Shipping	Marking Code
BL10N60	TO-220AB	50 pcs / Tube	10N60
BL10N60F	ITO-220AB	50 pcs / Tube	10N60F
BL10N60B	TO-263	50 pcs / Tube or 800 pcs Tape & Reel	10N60B

### Maximum Ratings (@T<sub>A</sub>=25°C unless otherwise specified)

Symbol	Parameter	Value	Units
V <sub>DSS</sub>	Drain-Source Voltage	600	V
V <sub>GSS</sub>	Gate -Source Voltage	±30	V
I <sub>D</sub>	Continuous Drain Current T <sub>C</sub> =25°C T <sub>C</sub> =100°C	10 6.4	A
I <sub>DM</sub>	Pulsed Drain Current	40	A

### Thermal Characteristics

Parameter	Symbol	BL10N60	BL10N60F	BL10N60B	Units
Power Dissipation	P <sub>D</sub>	130	40	130	W
Typical thermal resistance per leg	R <sub>θJC</sub>	0.96	3.1	0.96	°C/W
Operating junction temperature range	T <sub>J</sub>	150			°C
Storage temperature range	T <sub>STG</sub>	-55 to +150			°C

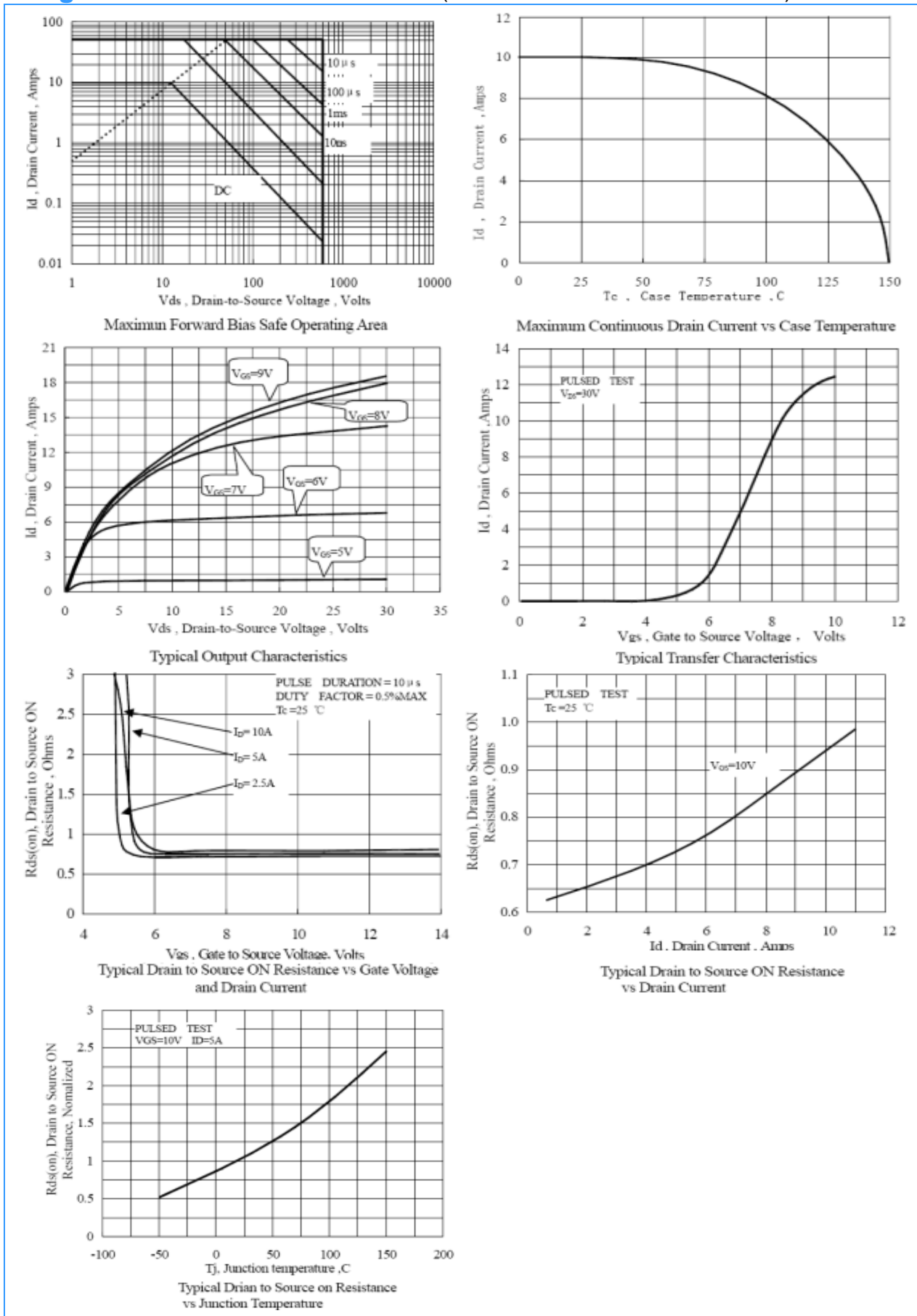
### Electrical Characteristics (@T<sub>A</sub>=25°C unless otherwise specified)

Symbol	Parameter	Test conditions	MIN	TYP	MAX	UNIT
<b>OFF Characteristics</b>						
V <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	600	-	-	V
I <sub>DSS</sub>	Drain to Source Leakage Current	V <sub>DS</sub> =600V, V <sub>GS</sub> =0V	-	-	25	μA
I <sub>GSS</sub>	Gate-body Leakage	V <sub>GS</sub> =±30V, V <sub>DS</sub> =0V	-	±100	±200	nA
<b>ON Characteristics</b> (NOTE2)						
R <sub>DS(ON)</sub>	Static Drain-Source On-resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =3A	-	0.65	0.75	Ω
V <sub>GS(TH)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	2	-	4	V
<b>Dynamic Characteristics</b> (NOTE3)						
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> = 0V	-	1609	-	pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> = 25V	-	136	-	
C <sub>rss</sub>	Reverse Transfer Capacitance	f = 1.0MHz	-	7.5	-	
<b>Switching Characteristics</b> (NOTE3)						
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>DD</sub> =300V, I <sub>D</sub> =10A R <sub>G</sub> =10Ω,	-	26	-	nS
t <sub>r</sub>	Turn-on Rise Time		-	23	-	
t <sub>d(off)</sub>	Turn-Off Delay Time		-	49	-	
t <sub>f</sub>	Turn-Off Fall Time		-	27	-	
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =480V, I <sub>D</sub> =10A V <sub>GS</sub> =10V	-	32	-	nC
Q <sub>gs</sub>	Gate-Source Charge		-	8	-	
Q <sub>gd</sub>	Gate-Drain Charge		-	12	-	
<b>Source-Drain Diode Characteristics</b>						
V <sub>SD</sub>	Diode Forward Voltage(NOTE1)	I <sub>SD</sub> =10A, V <sub>GS</sub> =0V	-	-	1.5	V
I <sub>s</sub>	Diode Continuous Forward Current	T <sub>C</sub> =25°C	-	-	10	A

NOTE:

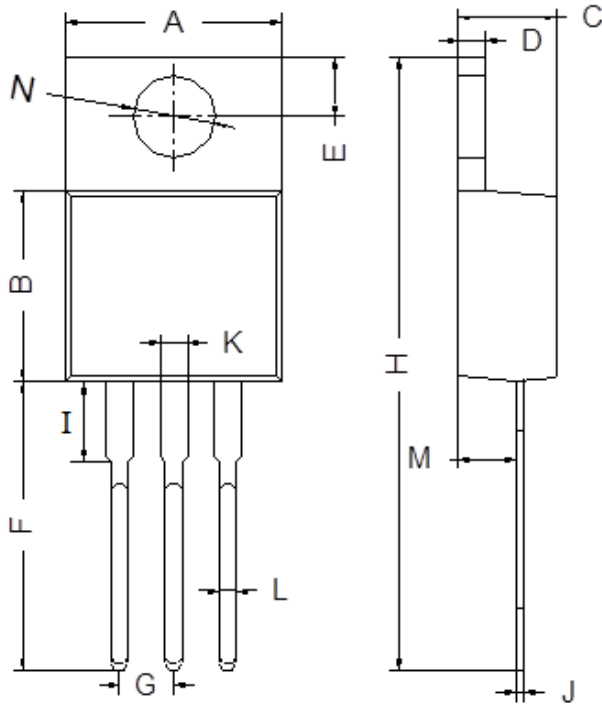
- 1、 Surface Mounted on FR4 Board, t ≤ 10 sec
- 2、 Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
- 3、 Guaranteed by design, not subject to production.

### Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)



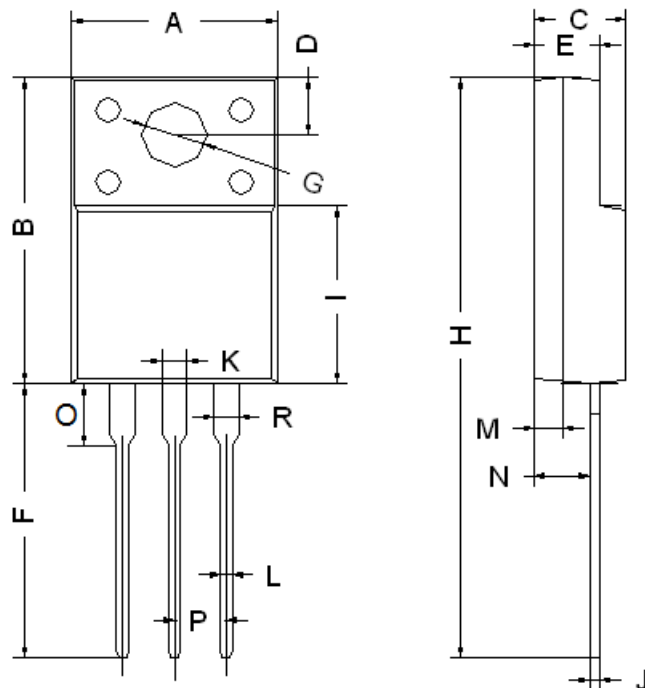
### Package Outline Dimensions (unit:mm)

#### TO-220AB



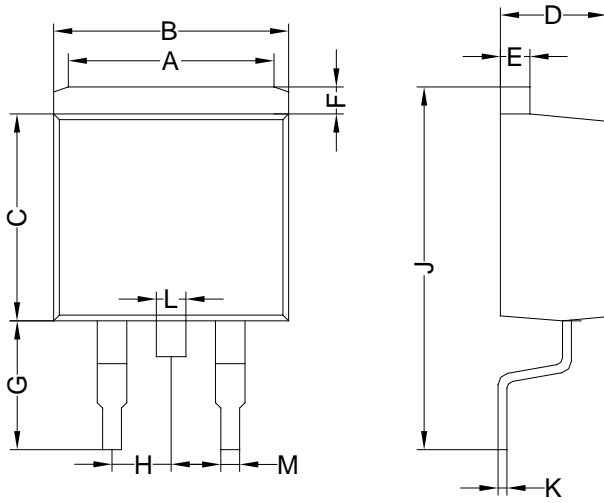
TO-220AB		
Dim	Min	Max
A	9.80	10.30
B	8.70	9.10
C	4.37	4.77
D	1.07	1.47
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
I	3.50	4.00
J	0.28	0.48
K	1.22	1.32
L	0.71	0.91
M	2.40	2.60
N	3.76	3.96

#### ITO-220AB



ITO-220AB		
Dim	Min	Max
A	9.90	10.30
B	14.80	15.20
C	4.30	4.70
D	2.50	2.90
E	2.80	3.30
F	13.00	13.60
G	3.10	3.30
H	28.00	28.60
I	7.90	8.90
J	0.40	0.60
L	0.70	0.90
M	1.30	1.50
N	2.60	2.80
O	2.60	3.10
P	2.45	2.65
K/R	1.10	1.30

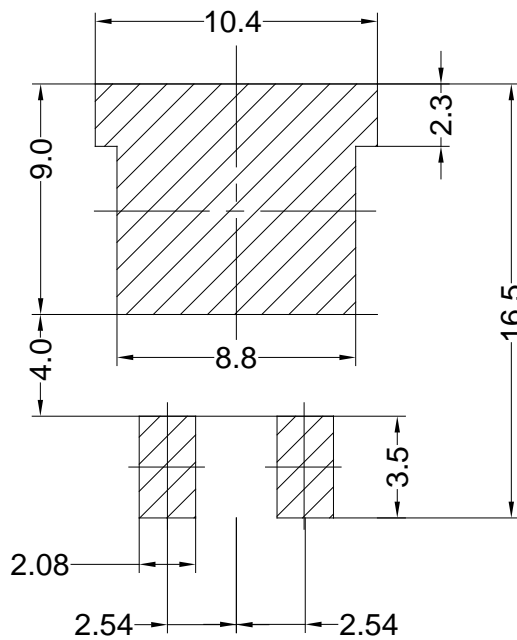
TO-263



TO-263		
A	7.30	7.70
B	9.90	10.30
C	8.70	9.10
D	4.37	4.77
E	1.07	1.47
F	1.06	1.26
G	5.34	5.74
H	2.44	2.64
J	15.30	15.90
K	0.28	0.48
L	1.17	1.37
M	0.71	0.91

Mounting Pad Layout(unit:mm)

TO-263



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