

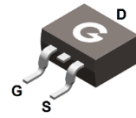
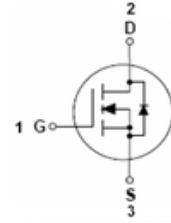
Features

- Advanced SGT technology
- Low on-resistance
- Ideal for high-frequency switching and synchronous rectification
- HBM: JESD22-A114-B: 1B
- RoHS compliant with Halogen-free

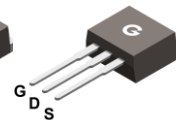
HF

Mechanical Data

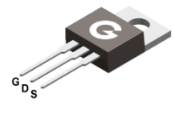
- Case: TO-220AB, TO-263, TO-262
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



TO-263



TO-262



TO-220AB

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL072N15TH	TO-220AB	50 pcs / Tube	072N15TH
BL072N15THJ	TO-262	50 pcs / Tube	072N15THJ
BL072N15THB	TO-263	50 pcs / Tube & 800 pcs / Tape & Reel	072N15THB

Maximum Ratings (@ T_C = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V _{DSS}	150	V
Gate-to-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current (T _C = 25°C)	I _D	121	A
Continuous Drain Current (T _C = 100°C)		77	
Continuous Drain Current (T _A = 25°C) ^{*1}		13.6	
Continuous Drain Current (T _A = 100°C) ^{*1}		8.6	
Pulsed Drain Current (t _p = 10μs, T _C = 25°C)	I _{DM}	484	A
Single Pulse Avalanche Energy ^{*3}	E _{AS}	370	mJ
Power Dissipation (T _C = 25°C)	P _D	250	W
Power Dissipation (T _A = 25°C) ^{*1}		3.1	
Operating Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction-to-Case	R _{θJC}	-	0.42	0.5	°C/W
Thermal Resistance Junction-to-Air ^{*1}	R _{θJA}	-	28	40	°C/W

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V _{DS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 1mA	150	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 150V, V _{GS} = 0V	-	-	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
On Characteristics						
R _{DS(ON)}	Drain-Source On-resistance *2	V _{GS} = 10V, I _D = 100A	-	6.3	7.2	mΩ
		V _{GS} = 8V, I _D = 50A	-	6.4	7.4	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	2	3.1	4	V
R _G	Gate Resistance	V _{GS} = 0V, f = 1MHz	-	2.3	-	Ω
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V	-	5562	-	pF
C _{OSS}	Output Capacitance	V _{DS} = 75V	-	400	-	
C _{RSS}	Reverse Transfer Capacitance	f = 100kHz	-	11	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time	V _{DS} = 75V	-	31	-	ns
t _r	Turn-on Rise Time	V _{GS} = 15V	-	54	-	
t _{d(OFF)}	Turn-Off Delay Time	R _G = 3.3Ω	-	84	-	
t _f	Turn-Off Fall Time	I _D = 25A	-	16	-	
Q _G	Total Gate-Charge	V _{DS} = 75V	-	73.8	-	nC
Q _{GS}	Gate to Source Charge	V _{GS} = 10V	-	27.4	-	
Q _{GD}	Gate to Drain (Miller) Charge	I _D = 100A	-	12.7	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage *2	I _{SD} = 100A, V _{GS} = 0V	-	0.9	1.2	V
t _{rr}	Reverse Recovery Time	I _{SD} = 40A, V _{GS} = 0V	-	95	-	ns
Q _{rr}	Reverse Recovery Charge	dI _{SD} /dt = 100A/μs	-	288	-	nC

Notes:

- The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper
- The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- The E_{AS} data shows Max. rating. The test condition is $V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH$

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

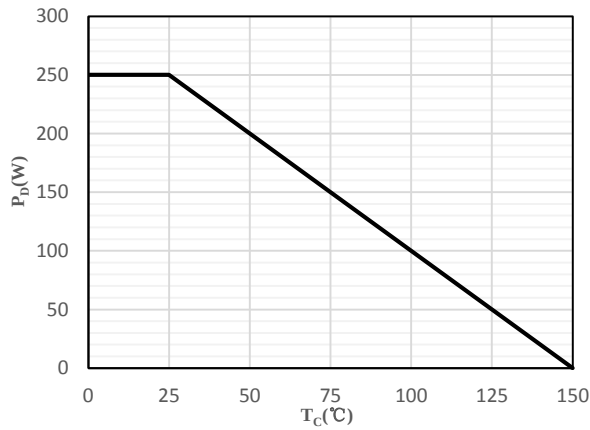


Fig 1 Power Dissipation

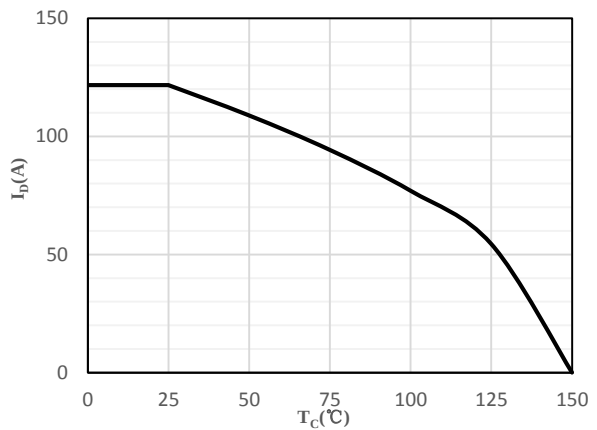


Fig 2 Drain Current

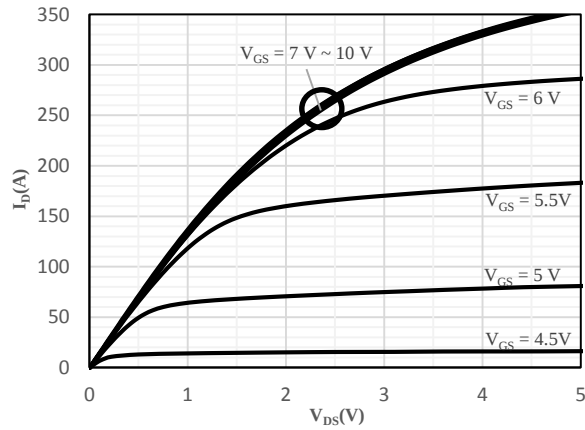


Fig 3 Typical Output Characteristics

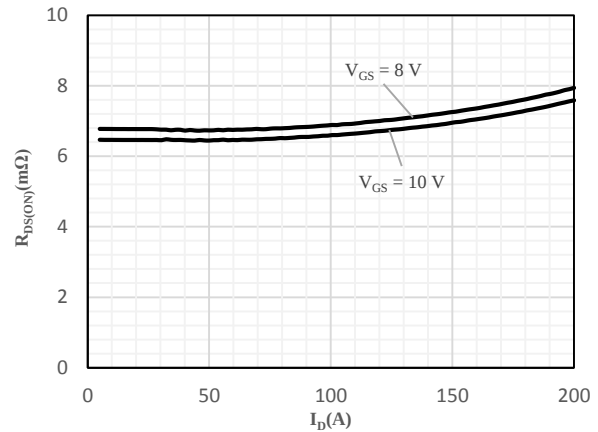


Fig 4 On-Resistance vs. Drain Current and Gate Voltage

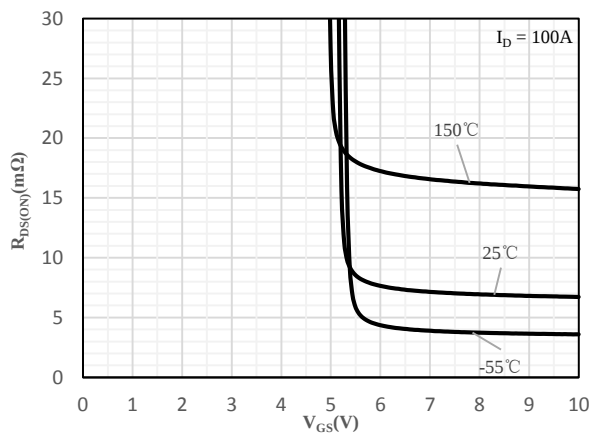


Fig 5 On-Resistance vs. Gate-Source Voltage

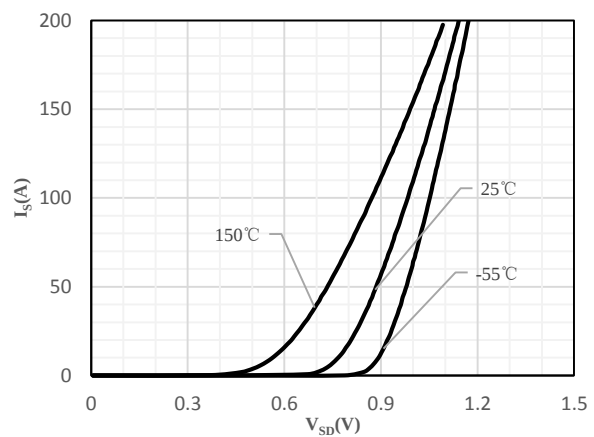


Fig 6 Body-Diode Characteristics

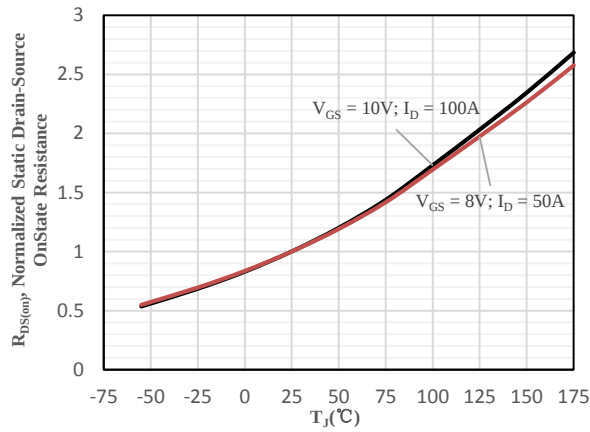


Fig 7 Normalized On-Resistance vs. Junction Temperature

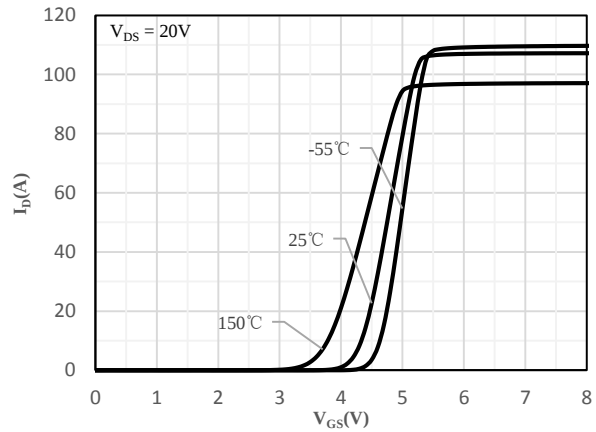


Fig 8 Transfer Characteristics

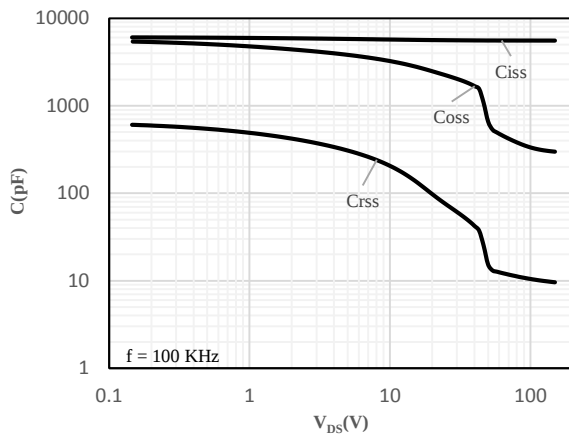


Fig 9 Capacitance Characteristics

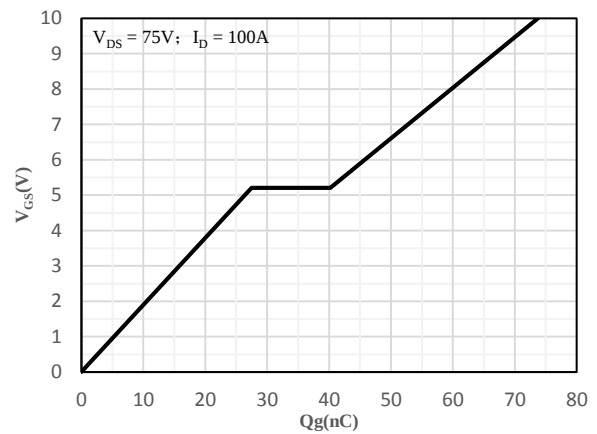


Fig 10 Gate-Charge Characteristics

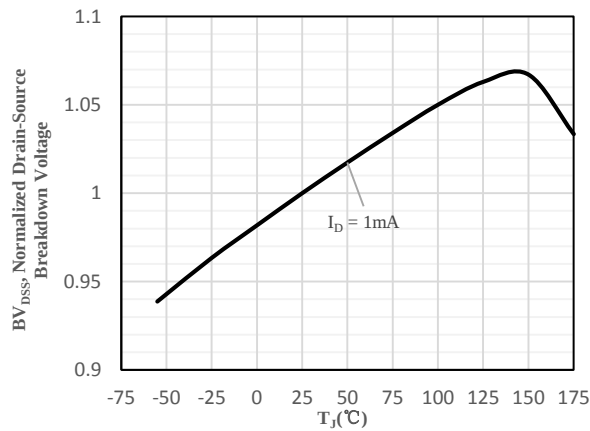


Fig 11 Normalized Breakdown Voltage vs. Junction Temperature

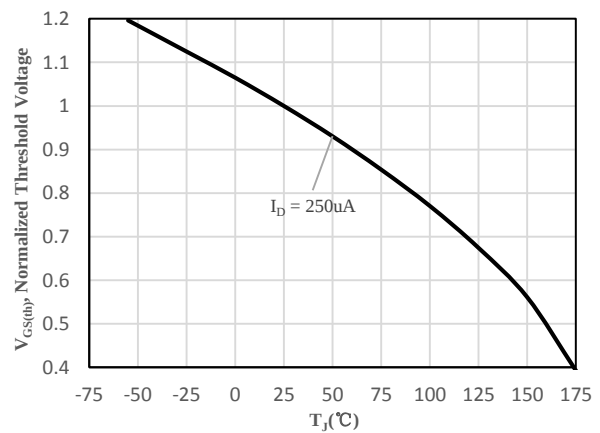


Fig 12 Normalized $V_{GS(th)}$ vs. Junction Temperature

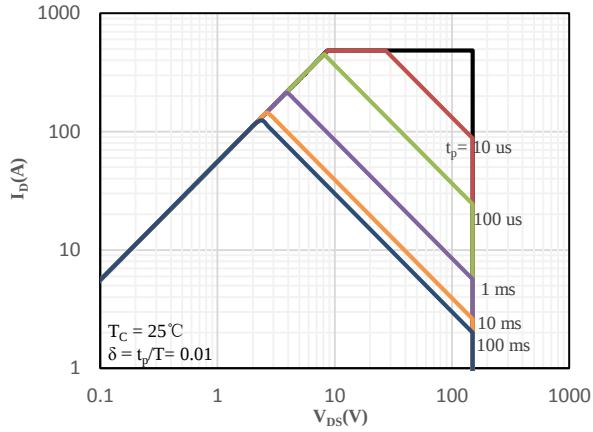


Fig 13 Safe Operating Area

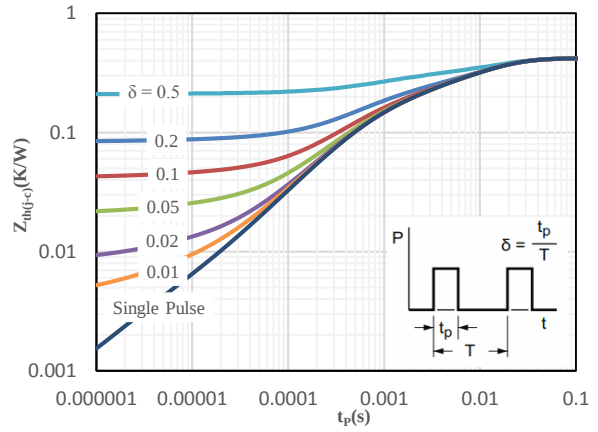
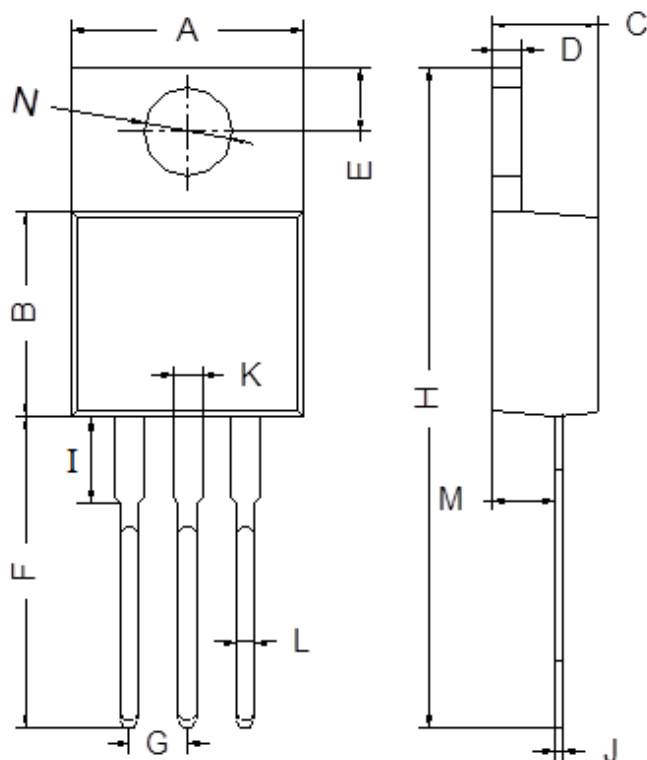
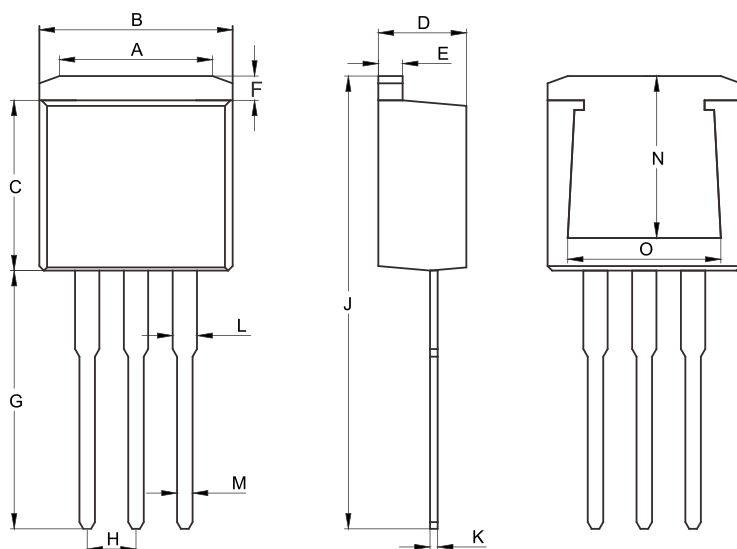


Fig 14 Maximum transient thermal impedance

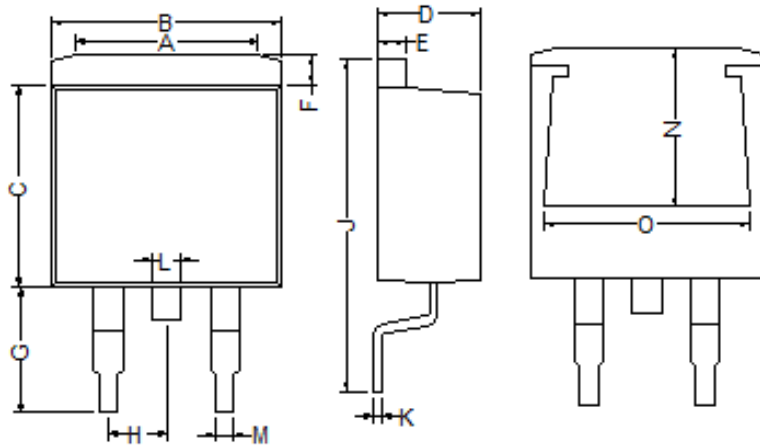
Package Outline Dimensions (Unit: mm)



TO-220AB		
Dimension	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



TO-262		
Dimension	Min.	Max.
A	7.00	9.00
B	9.90	10.30
C	8.50	9.10
D	4.37	4.77
E	1.07	1.47
F	1.07	1.47
G	13.00	14.00
H	2.44	2.66
J	23.00	24.00
K	0.28	0.48
L	1.17	1.37
M	0.71	0.91
N	6.55	7.68
O	7.80	8.20



TO-263		
Dimension	Min.	Max.
A	6.00	8.00
B	9.90	10.30
C	8.50	9.10
D	4.37	4.77
E	1.07	1.47
F	1.07	1.47
G	5.05	5.74
H	2.44	2.66
J	15.15	15.80
K	0.28	0.48
L	1.17	1.37
M	0.71	0.91
N	6.55	7.68
O	7.70	8.10

Mounting Pad Layout (Unit: mm)

TO-263

