

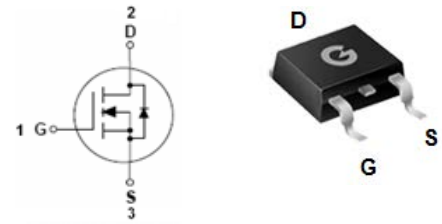
Features

- High switching speed

HF

Mechanical Data

- Case: TO-252
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



TO-252

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL4N50D	TO-252	80 pcs / Tube & 2500 pcs / Tape & Reel	4N50D

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	500	V
Gate-to-Source Voltage	V_{GS}	± 30	V
Continuous Drain Current	I_D	4	A
Pulsed Drain Current	I_{DM}	16	A

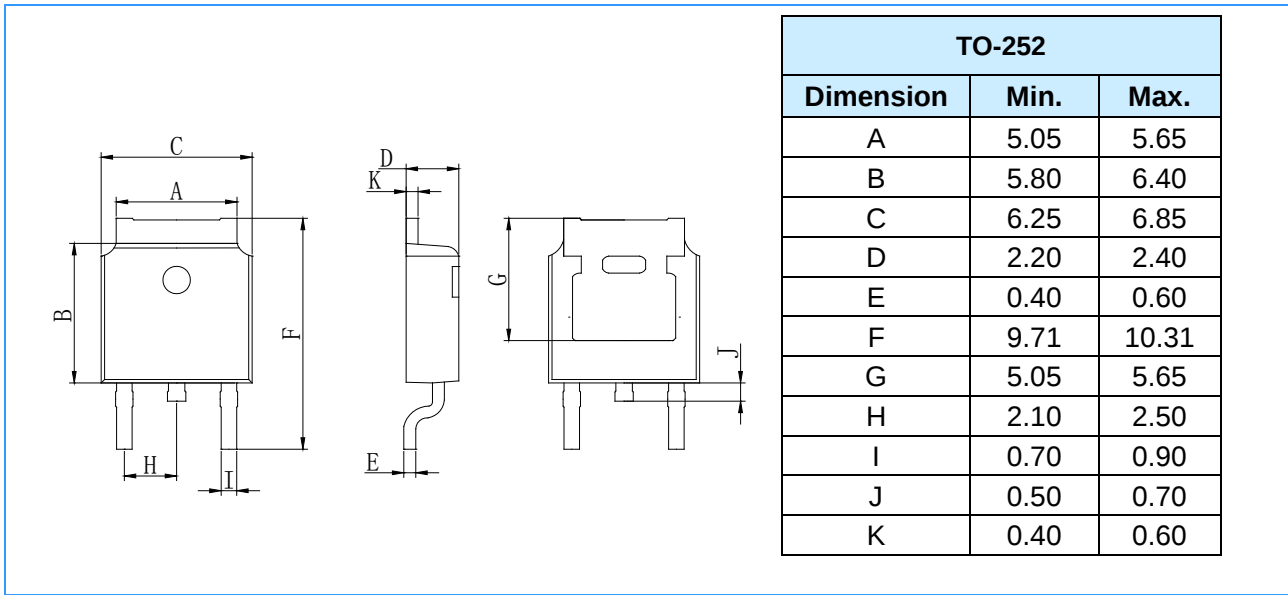
Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D	83	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	$-55 \sim +150$	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

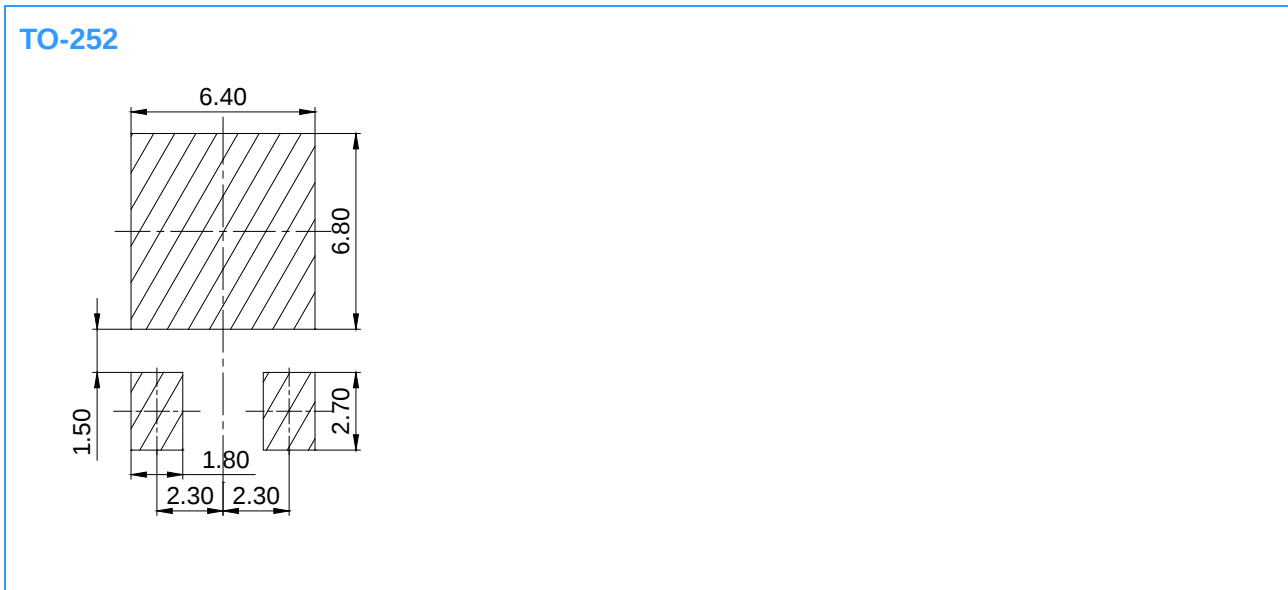
Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250μA	500	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 500V, V _{GS} = 0V	-	-	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±30V, V _{DS} = 0V	-	-	±100	nA
On Characteristics						
R _{DS(ON)}	Static Drain-Source On-resistance	V _{GS} = 10V, I _D = 2A	-	-	2	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	2	-	4	V
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V	-	485	-	pF
C _{OSS}	Output Capacitance	V _{DS} = 25V	-	65	-	
C _{RSS}	Reverse Transfer Capacitance	f = 1.0MHz	-	5	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time	V _{DD} = 250V R _G = 25Ω I _D = 4A	-	14	-	ns
t _r	Turn-on Rise Time		-	21	-	
t _{d(OFF)}	Turn-Off Delay Time		-	27	-	
t _f	Turn-Off Fall Time		-	20	-	
Q _G	Total Gate-Charge	V _{DD} = 400V	-	11	-	nC
Q _{GS}	Gate to Source Charge	V _{GS} = 10V	-	3	-	
Q _{GD}	Gate to Drain (Miller) Charge	I _D = 4A	-	5	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} = 4A, V _{GS} = 0V	-	-	1.6	V
I _{SD}	Diode Continuous Forward Current		-	-	4	A
I _{SM}	Diode Pulsed Forward Current		-	-	16	A
t _{rr}	Body Diode Reverse Recovery Time	V _{GS} = 0V, I _S = 4A dI/dt = 100A/μs	-	36	-	nS
Q _{rr}	Body Diode Reverse Recovery Charge		-	33	-	μC

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



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