

N-Channel Enhancement Mode MOSFET

Feature

- 80V/80A
 $R_{DS(ON)}=5.7\text{ m}\ (\text{typ.})@V_{GS} = 10\text{V}$
- 100% Avalanche Tested
- Reliable and Rugged
- Lead-Free and Green Devices Available
 (RoHS Compliant)

Pin Description

Applications

- Switching application
- Power management for inverter systems

Ordering and Marking Information

D G060N08 XYMXXXXXX	U G060N08 XYMXXXXXX	V G060N08 XYMXXXXXX	Package Code D: TO-252-2L U: TO-251-3L V: TO-251-3S Date Code XYMXXXXXX
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Note: HUAYI lead-free products contain molding compounds/die attach materials and 100% matte tin plate Termination finish; which are fully compliant with RoHS. HUAYI lead-free products meet or exceed the lead-free requirements of IPC/JEDEC J-STD-020 for MSL classification at lead-free peak reflow temperature. HUAYI defines Green to mean lead-free (RoHS compliant) and halogen free (Br or Cl does not exceed 900ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500ppm by weight).

HUAYI reserves the right to r(d) a(n) ar(n-9(f)7(d)}3()33.35,()J0.00888 Tc 2.7599)-318a(n-9(forr86 0 n)4(tai(as9(i)5s)a)C.,)

HYG060N08NS1D/U/V

Electrical Characteristics (Cont.)

Typical Operating Characteristics

Figure 1: Power Dissipation

Figure 2: Drain Current

Tc-Case Temperature(

Typical Operating Characteristics(Cont.)

Figure 7: On-Resistance vs. Temperature

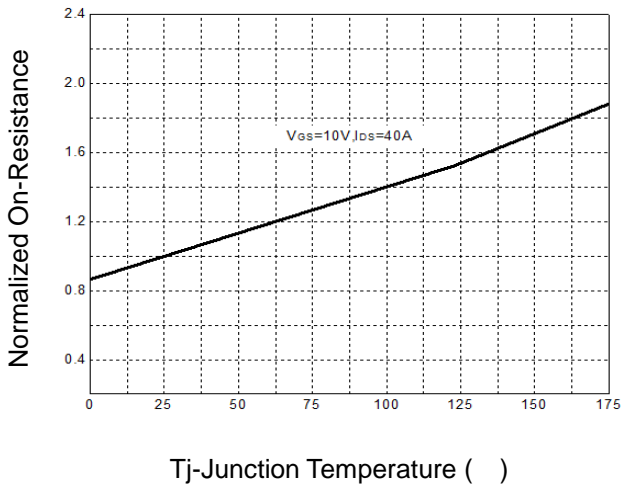


Figure 8: Source-Drain Diode Forward

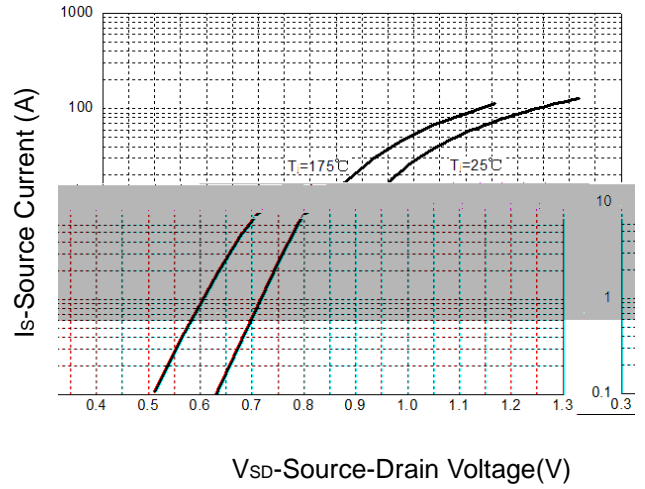


Figure 9: Capacitance Characteristics

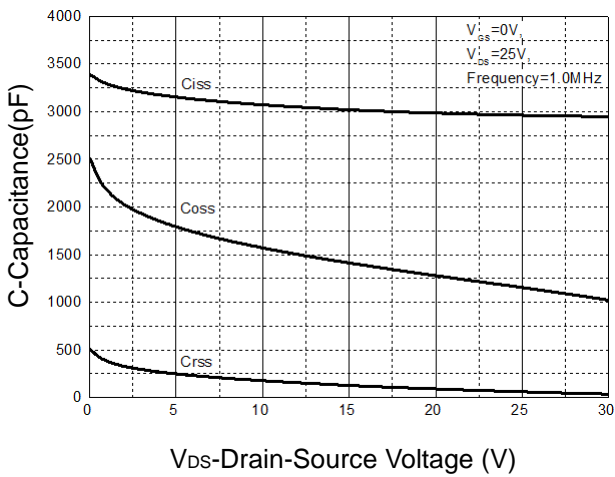
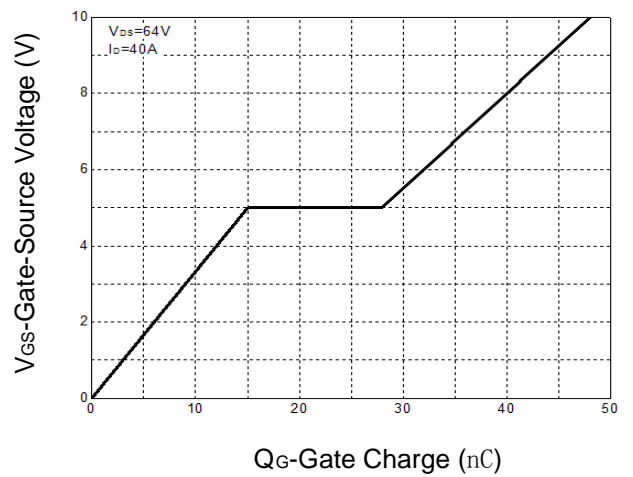


Figure 10: Gate Charge Characteristics



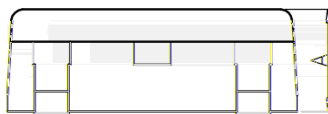
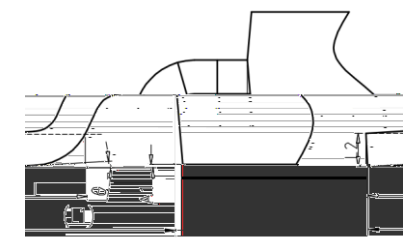
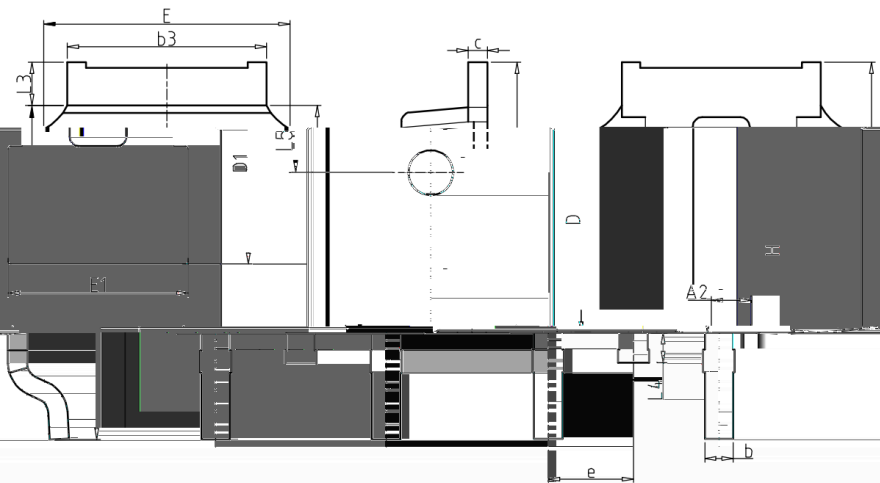
HYG060N08NS1D/U/V

Device Per Unit

Package Type	Unit	Quantity
TO-252-2L	Tube	75
TO-252-2L	Reel	2500
TO-251-3L	Tube	75
TO-251-3S	Tube	75

Package Information

TO-252-2L



COMMON DIMENSIONS

SYMBOL	mm		
	MIN	NOM	MAX
A	2.20	2.30	2.40
A1	0.00	-	0.20
A2	0.97	1.07	1.17
b	0.68	0.78	0.90
b3	5.20	5.33	5.50
c	0.43	0.53	0.63
D	5.98	6.10	6.22
D1	5.30REF		
E	6.40	6.60	6.80
E1	4.63	-	-
e	2.286BSC		
H	9.40	10.10	10.50
L	1.38	1.50	1.75
L1	2.90REF		
L2	0.51BSC		
L3	0.88	-	1.28
L4	-	-	1.00
L5	1.65	1.80	1.95
	0°	-	8°

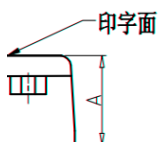
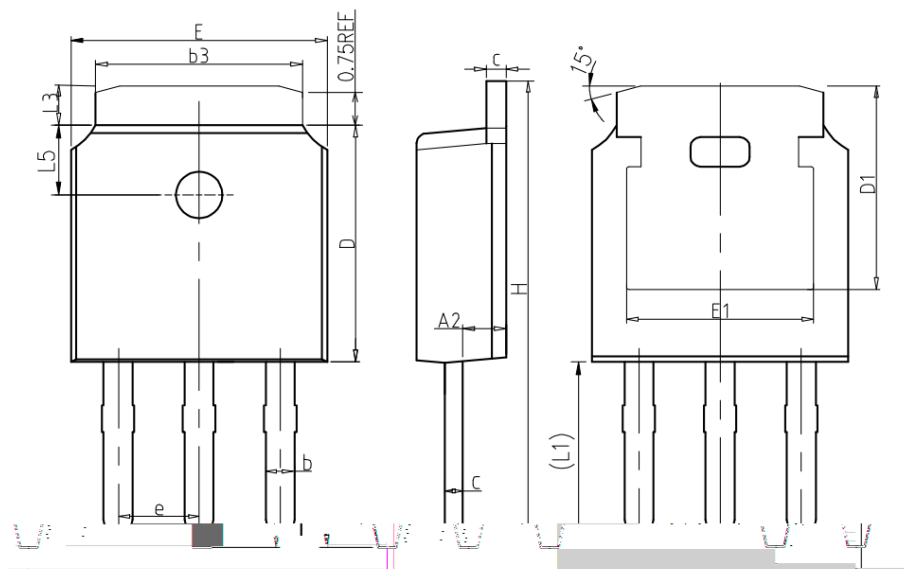
TO-251-3L



COMMON DIMENSIONS

SYMBOL	mm		
	MIN	NOM	MAX
A	2.20	2.30	2.40
A2	0.97	1.07	1.17
b	0.68	0.78	0.90
b2	0.00	0.04	0.10
b2'	0.00	0.04	0.10
b3	5.20	5.33	5.50
c	0.43	0.53	0.63
D	5.98	6.10	6.22
D1	5.30REF		
E	6.40	6.60	6.80
E1	4.63	-	-
e	2.286BSC		
H	16.22	16.52	16.82
L1	9.15	9.40	9.65
L3	0.88	1.02	1.28
L5	1.65	1.80	1.95

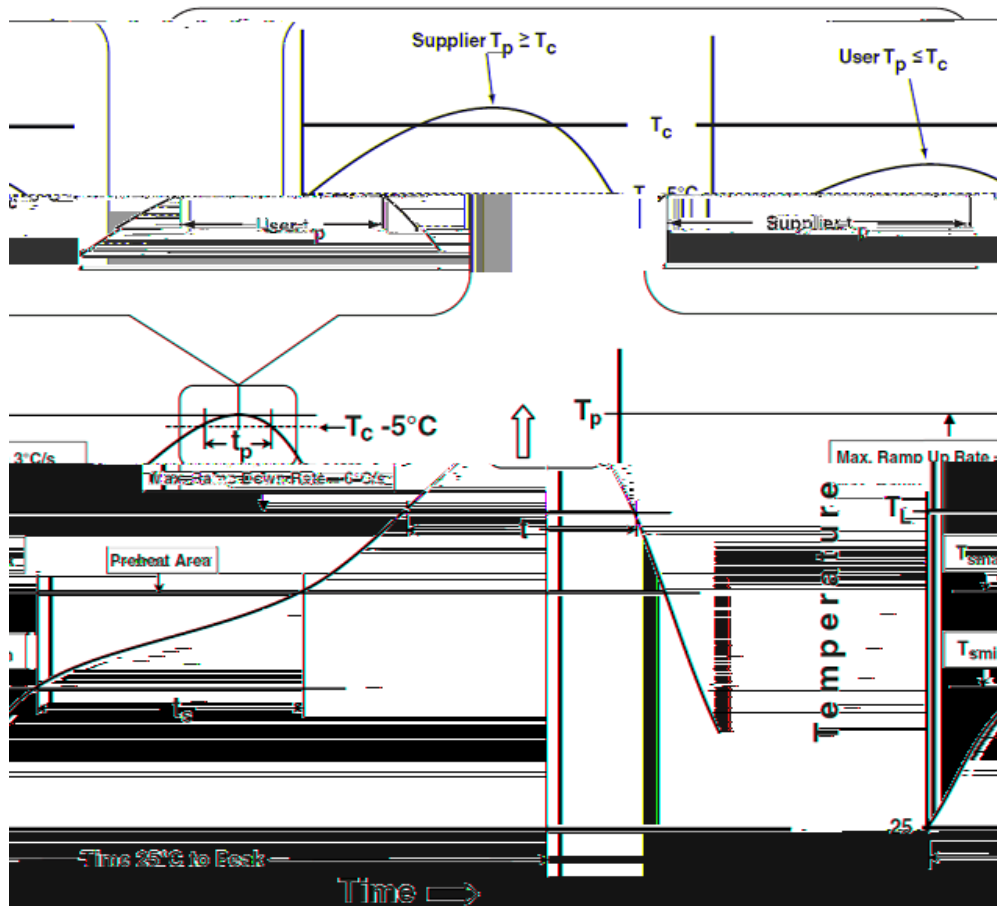
TO-251-3S



COMMON DIMENSIONS

SYMBOL	mm		
	MIN	NOM	MAX
A	2.20	2.30	2.40
A2	0.97	1.07	1.17
b	0.68	0.78	0.90
b3	5.20	5.33	5.50
c	0.43	0.53	0.63
D	5.98	6.10	6.22
D1	5.30REF		
E	6.40	6.60	6.80
E1	4.63	-	-
e	2.286BSC		
H	10.00	11.22	11.44
L1	3.90	4.10	4.30
L3	0.88	1.02	1.28
L5	1.65	1.80	1.95

Classification Profile



Classification Reflow Profiles

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat & Soak		
Temperature min (T_{smin})	100 °C	150 °C
Temperature max (T_{smax})	150 °C	200 °C
Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds	60-120 seconds
Average ramp-up rate (T_{smax} to T_p)	3 °C/second max.	3°C/second max.
Liquidous temperature (T_L)	183 °C	217 °C
Time at liquidous (t_L)	60-150 seconds	60-150 seconds
Peak package body Temperature (T_p)*	See Classification Temp in table 1	See Classification Temp in table 2
Time (t_p)** within 5°C of the specified classification temperature (T_c)	20** seconds	30** seconds
Average ramp-down rate (T_p to T_{smax})	6 °C/second max.	6 °C/second max.
Time 25°C to peak temperature	6 minutes max.	8 minutes max.

*Tolerance for peak profile Temperature (T_p) is defined as a supplier minimum and a user maximum.

** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

Table 1.SnPb Eutectic Process Classification Temperatures (Tc)

Package Thickness	Volume mm <350	Volume mm 350
2.5 mm	235 °C	220 °C
	220 °C	220 °C

Table 2.Pb-free Process Classification Temperatures (Tc)

Package Thickness	Volume mm <350	Volume mm 350-2000	Volume mm 2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm 2.5 mm	260 °C	250 °C	245 °C
2.5 mm	250 °C	245 °C	245 °C

Reliability Test Program

Test item	Method	Description
SOLDERABILITY	JESD-22, B102	5 Sec, 245°C
PRECON	JESD-22, A113	30°C/60%/192Hrs
HTRB	JESD-22, A108	168Hrs//500Hrs/1000Hrs, Bias @ 150°C
HTGB	JESD-22, A108	168 Hrs/500Hrs/1000Hrs, Vgs100% @ 150°C
PCT	JESD-22, A102	96 Hrs, 100%RH, 2atm, 121°C
TCT	JESD-22, A104	250/500 Cycles, -55°C~150°C

Customer Service

Worldwide Sales and Service: sales@hymexa.com

Technical Support: Technology@hymexa.com

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