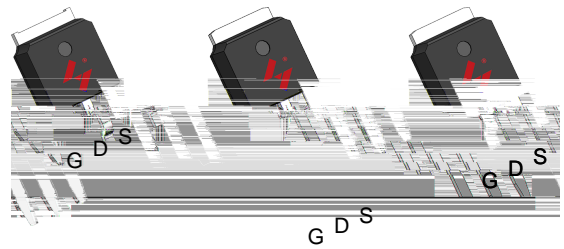


N-Channel Enhancement Mode MOSFET

Features

- 80V/90A,
 $R_{DS(ON)}=7.8m$ (typ.) @ $V_{GS}=10V$
- Avalanche Rated
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

Pin Description



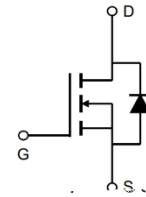
TO-252-2L

TO-251-3L

TO-251-3S




Applications

Power Management for Inverter Systems.



N-Channel MOSFET

Ordering and Marking Information

 D HY1908 XYMXXXXXX	 U HY1908 XYMXXXXXX	 V HY1908 XYMXXXXXX	Package Code D : TO-252-2L U : TO-251-3L V : TO-251-3L Date Code XYMXXXXXX
--	--	--	---

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 make changes, corrections, enhancements, modifications, and improvements to this product and/or to this document at any time without notice.

HY1908D/U/V

Absolute Maximum Ratings

(T _C =25°C Unless Otherwise Noted)				
V _{DSS}	Drain-Source Voltage		80	V
V _{GSS}	Gate-Source Voltage		±25	
T _J	Maximum Junction Temperature		175	°C
T _{STG}	Storage Temperature Range		-55 to 175	°C
I _S	Diode Continuous Forward Current	T _C =25°C	90	A
I _{DM}		T _C =25°C	315**	A
I _D	Continuous Drain Current	T _C =25°C	90	A
		T _C =100°C	59	
P _D	Maximum Power Dissipation	T _C =25°C	64	W
		T _C =100°C	32	
R _{JC}	Thermal Resistance-Junction to Case		2.35	°C/W
R _{JA}	Thermal Resistance-Junction to Ambient		110	
E _{AS}	Avalanche Energy, Single Pulsed	L=0.5mH	214***	mJ

Electrical Characteristics (T_C = 25 C Unless Otherwise Noted)

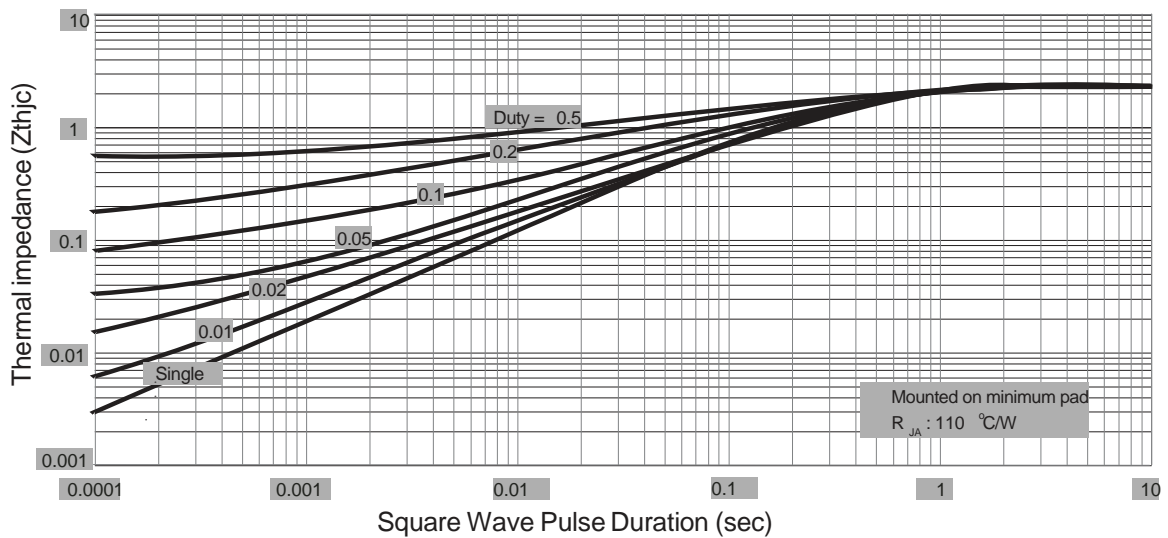
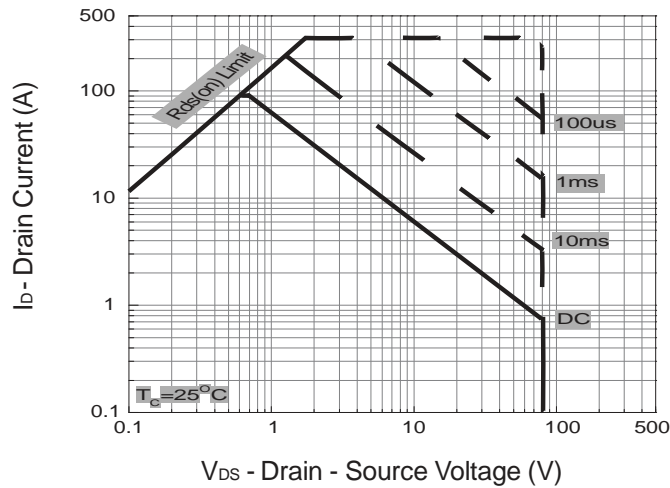
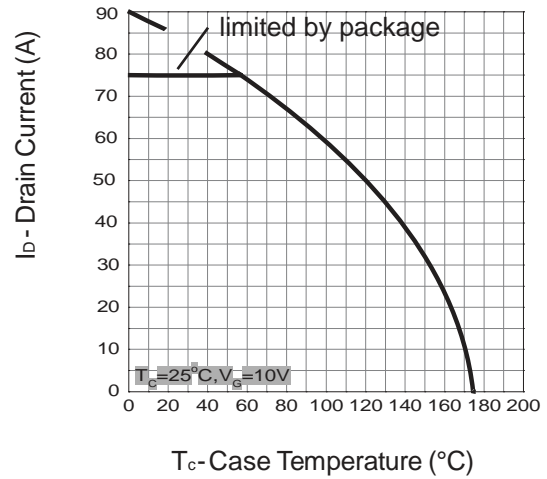
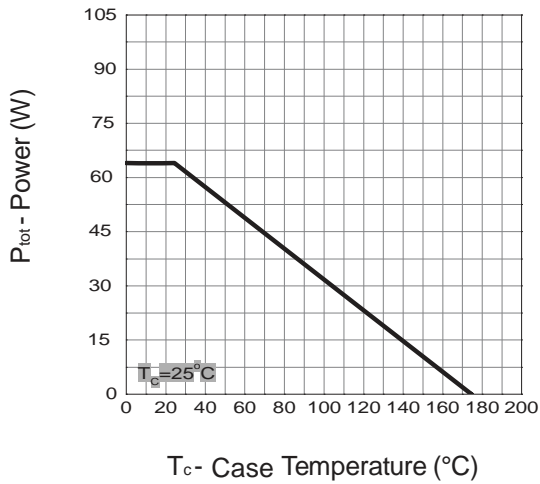
--	--	--	--	--

HY1908D/U/V

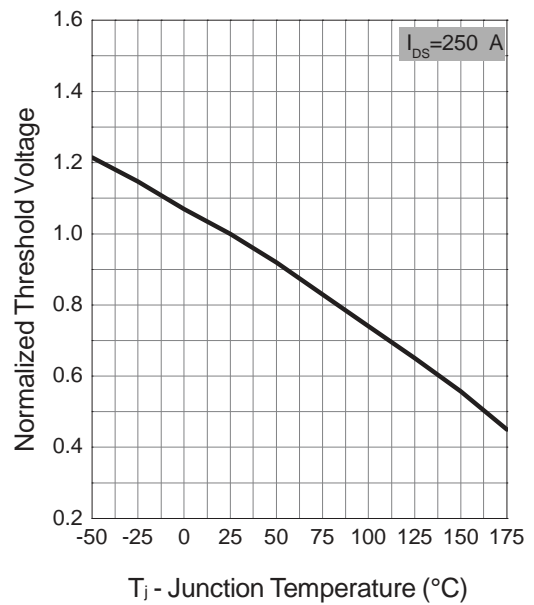
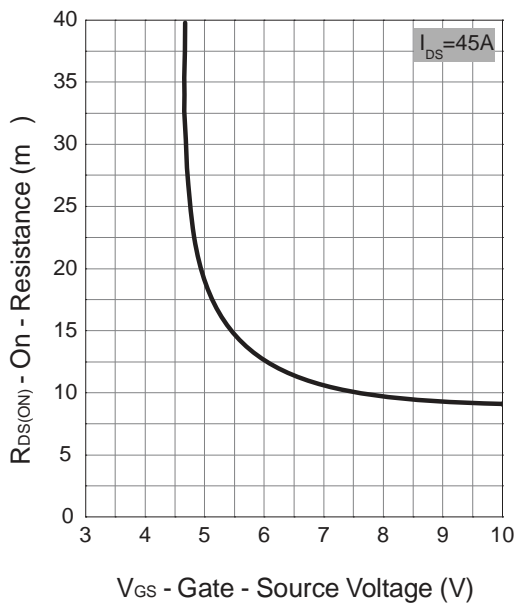
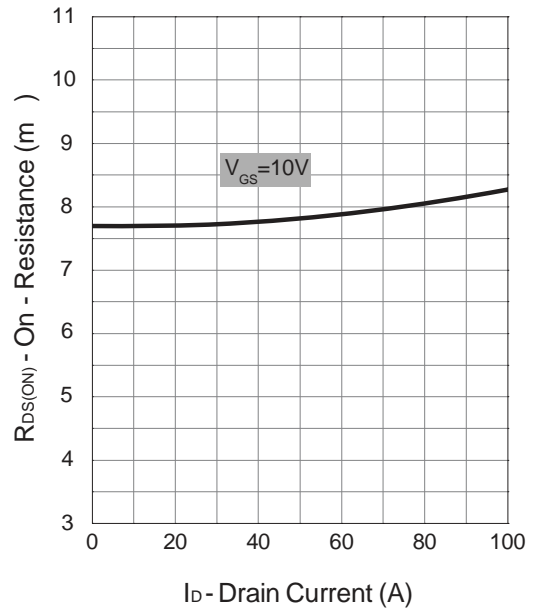
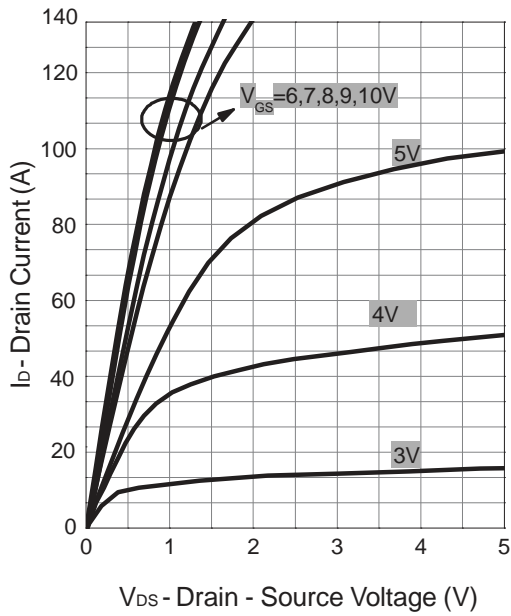
Electrical Characteristics (Cont.) (T_c = 25 C Unless Otherwise Noted)

R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	1.2	-		
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =25V, Frequency=1.0MHz	-	3864	-	pF	
C _{oss}	Output Capacitance		-	365	-		
C _{rss}	Reverse Transfer Capacitance		-	239	-		
t _{d(ON)}	Turn-on Delay Time		-	26		ns	
T _r	Turn-on Rise Time		-	42			
t _{d(OFF)}	Turn-off Delay Time		-	64			
T _f	Turn-off Fall Time		-	20			
Q _g	Total Gate Charge	V _{DS} =64V, V _{GS} =10V, I _{DS} =45A	-	84		nC	
Q _{gs}	Gate-Source Charge		-	16	-		
Q _{gd}	Gate-Drain Charge		-	26	-		

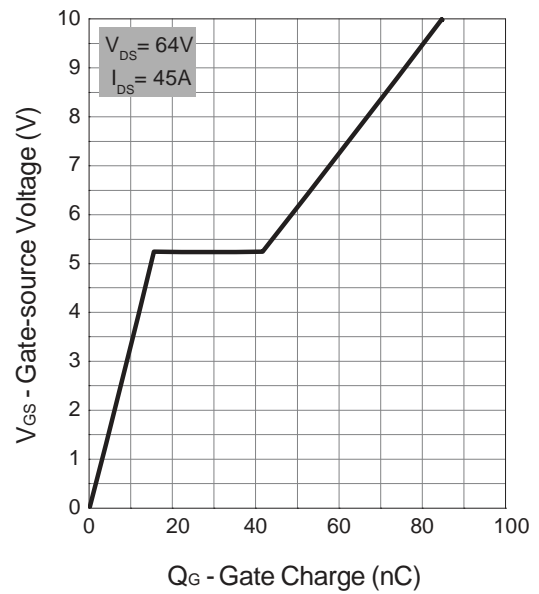
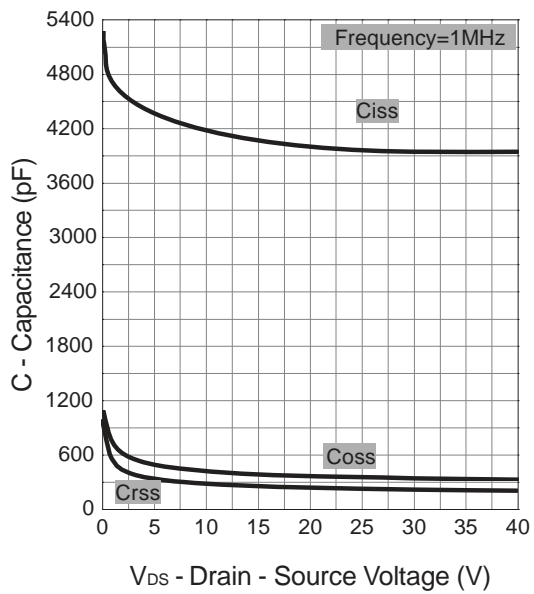
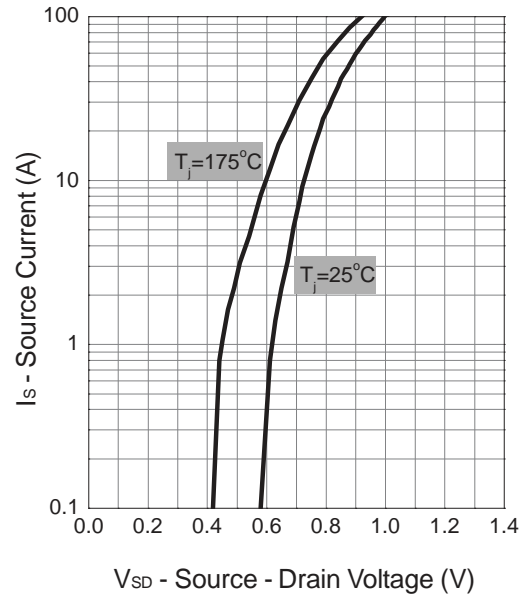
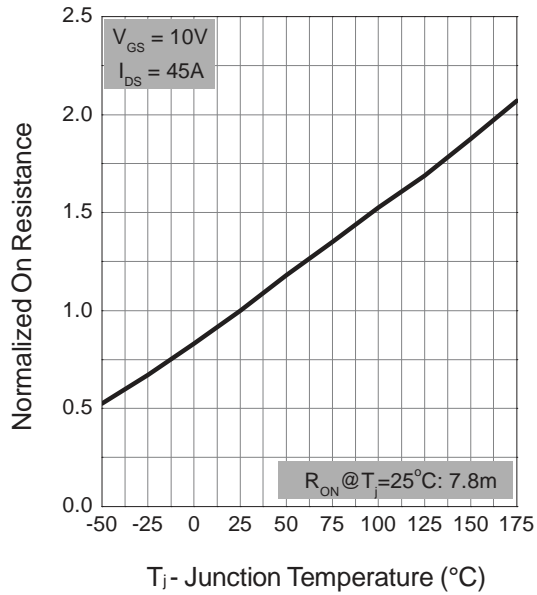
Typical Operating Characteristics

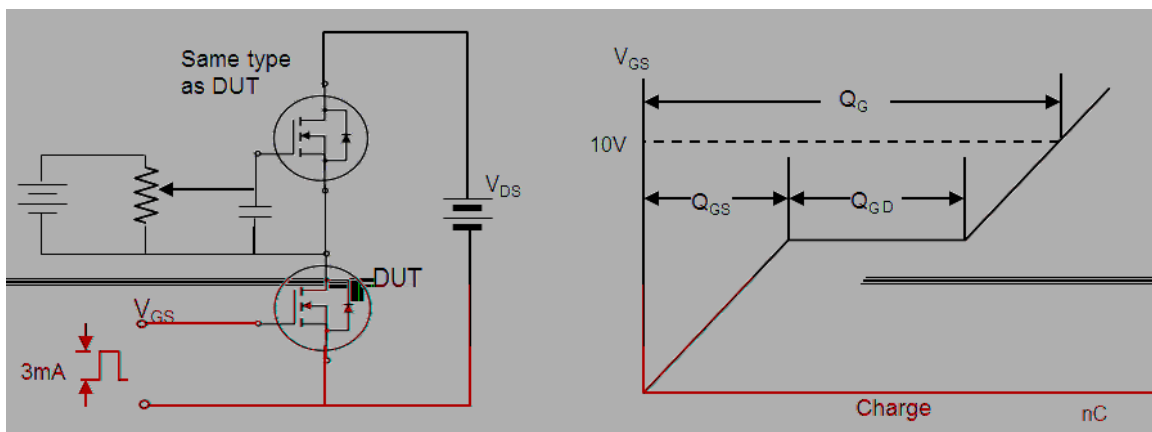
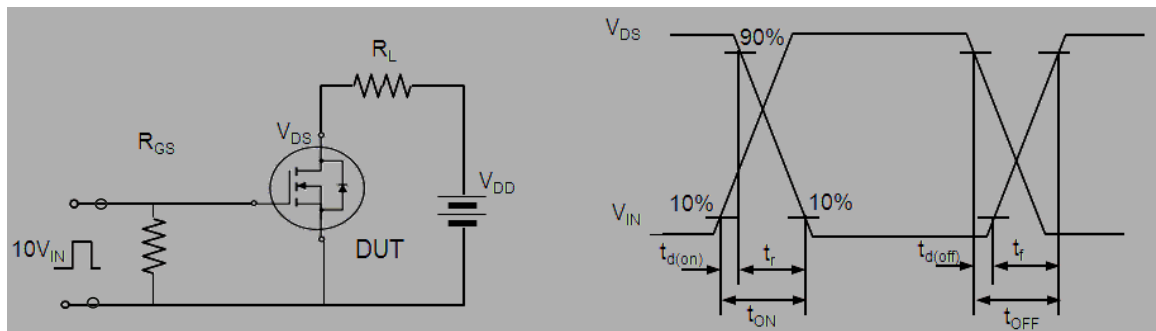
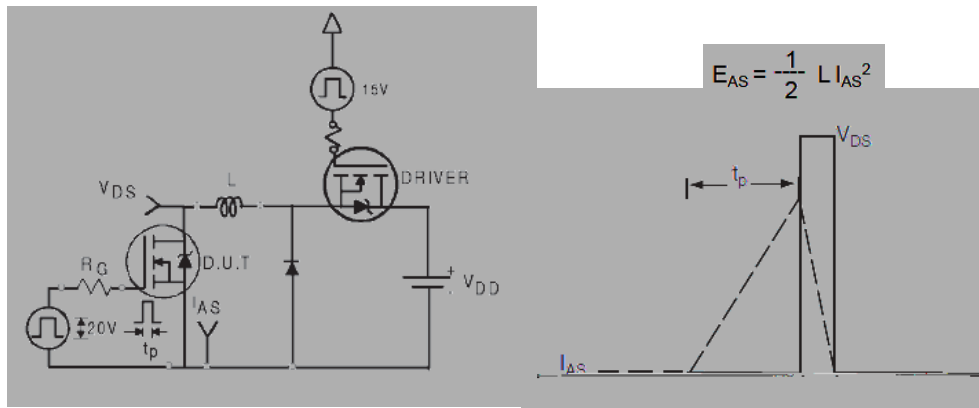


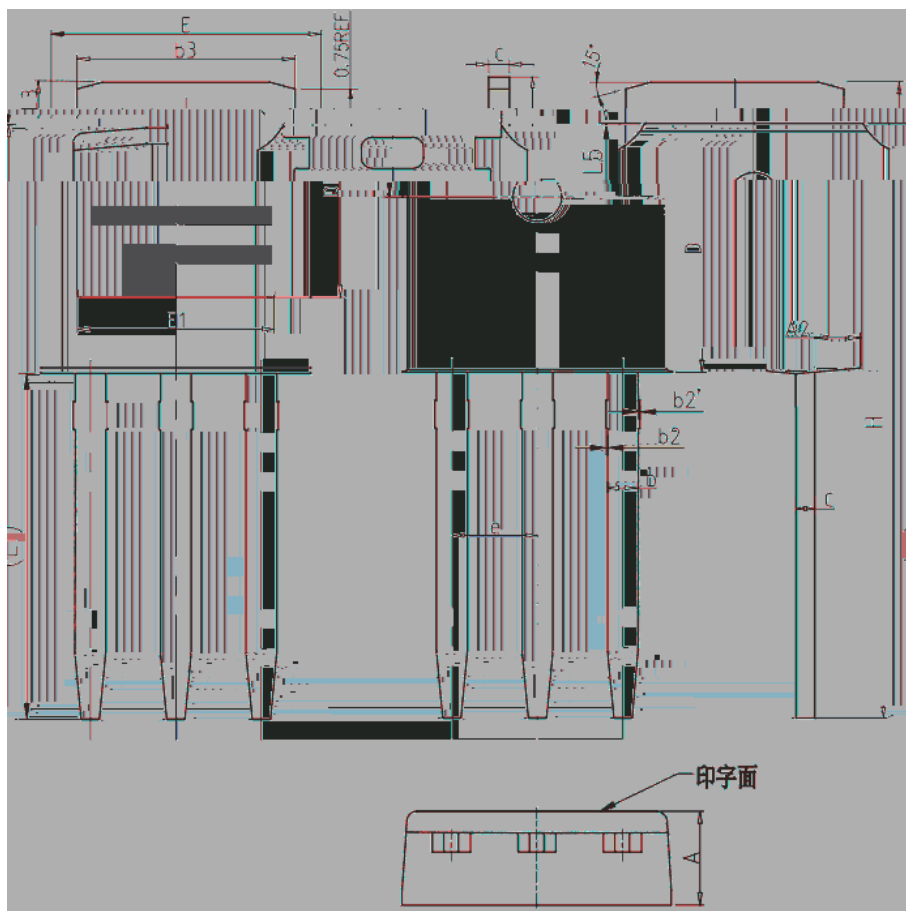
Typical Operating Characteristics (Cont.)



Typical Operating Characteristics (Cont.)

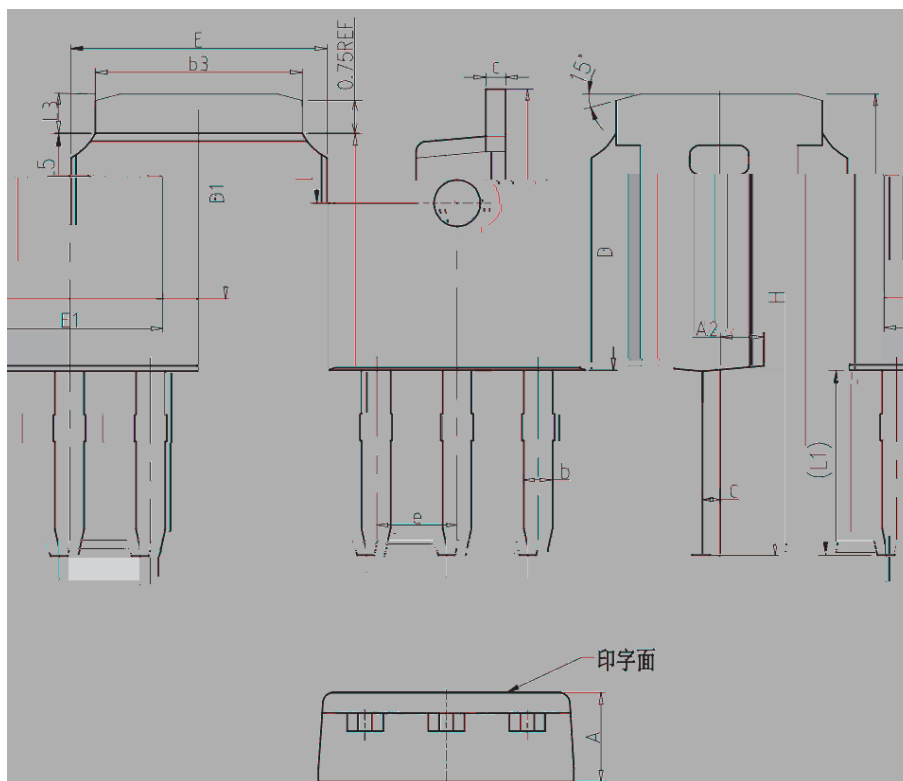






COMMON DIMENSIONS

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



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

HY1908D/U/V

Table 1. SnPb Eutectic Process – Classification Temperatures (Tc)

		≥
<2.5 mm	235 C	220 C
2.5 mm	220 C	220 C

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

<1.6 mm	260 C	260 C	260 C
– 2.5 mm	260 C	250 C	245 C
2.5 mm	250 C	245 C	245 C

Reliability Test Program

SOLDERABILITY	JESD-22, B102	5 Sec, 245 C
HTRB	JESD-22, A108	168Hrs/500Hrs/1000Hrs,Bias@125 C
PCT	JESD-22, A102	96 Hrs, 100 RH, 2atm, 121 C
TCT	JESD-22, A104	500 Cycles, -55 C~150 C

Worldwide Sales and Service: sales@hymexa.com

Technical Support: Technology@hymexa.com

Huayi Microelectronics Co., Ltd.

No.8928,Shangji Road,Economic and Technological Development Zone,Xi'an,China

TEL: (86-029) 86685706

FAX: (86-029) 86685705

E-mail: sales@hymexa.com

Web net: www.hymexa.com