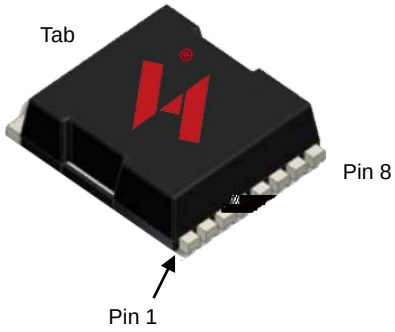
N-Channel Enhancement Mode MOSFET

Feature

- 60V/465A
  $R_{DS(ON)}$=0.75 m (typ.)@V_{GS} = 10V
- 100% Avalanche Tested
- Reliable and Rugged
- Halogen-Free Devices Available
  (RoHS Compliant)

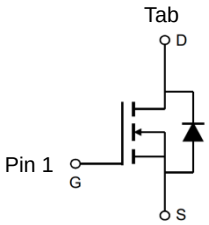
Pin Description



TOLL

Applications

- Switching application
- Power management for inverter systems
- Battery management



Pin 2,3,4,5,6,7,8

N-Channel MOSFET

Ordering and Marking Information

TA G010N06 XYMXXXXXX	Package Code TA:TOLL Date Code XYMXXXXXX

Note: HUAYI lead-free products contain molding compounds/die attach materials and 100% matte tin plate Termi-Nation finish;which are fully compliant with RoHS. HUAYI lead-free products meet or exceed the lead-Free require-ments 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 pr-oduct and/or to this document at any time without notice.

Typical Operating Characteristics(Cont.)

Figure 7: On-Resistance vs. Temperature

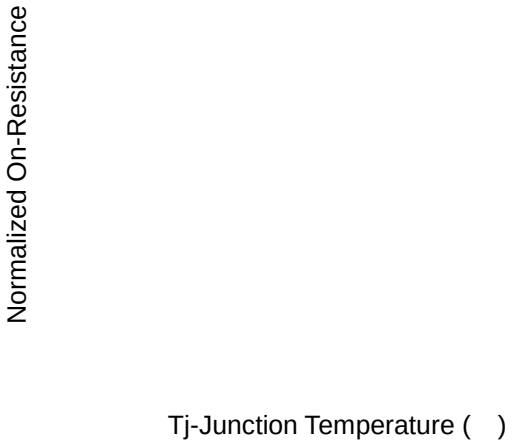


Figure 8: Source-Drain Diode Forward

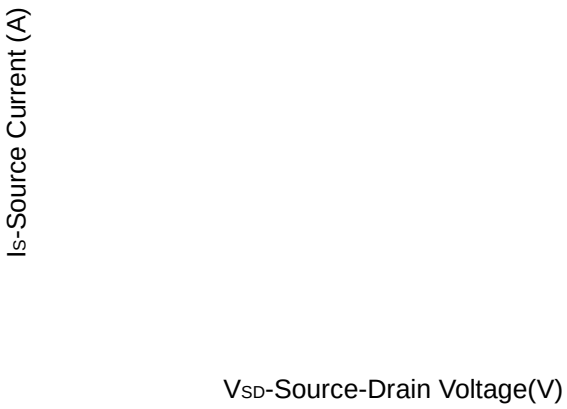


Figure 9: Capacitance Characteristics

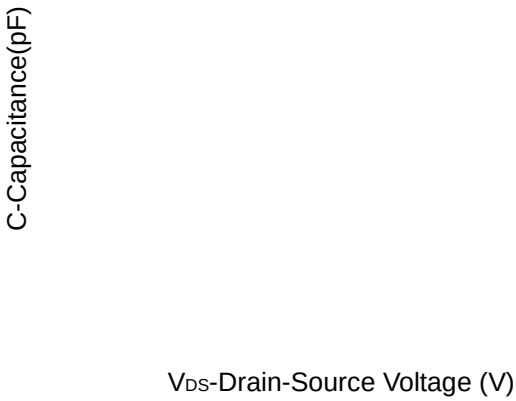


Figure 10: Gate Charge Characteristics

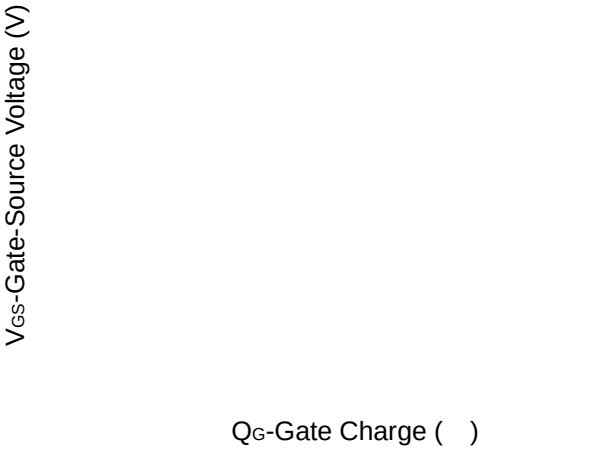


Figure 11: Transfer Characteristice

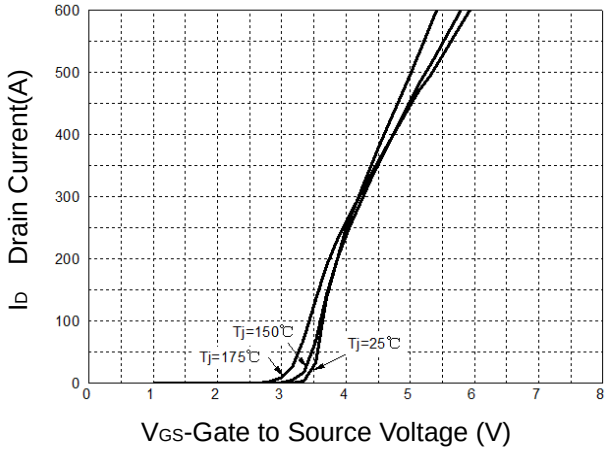
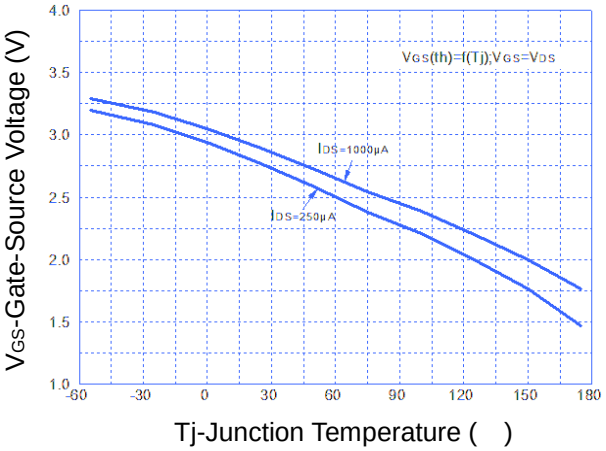


Figure 12: Gate Charge Characteristics

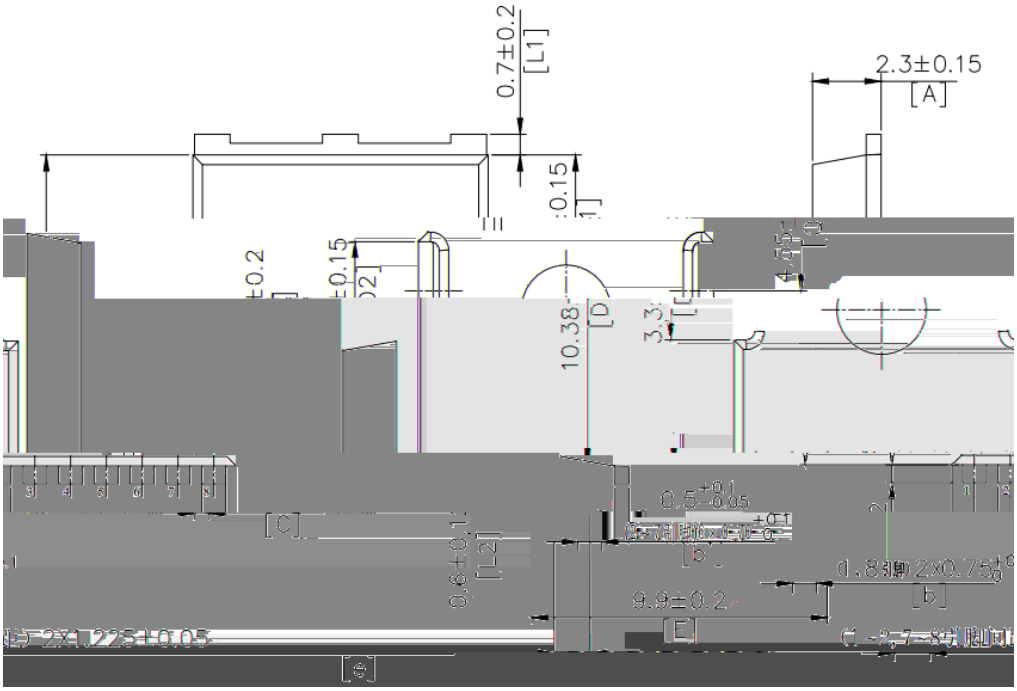


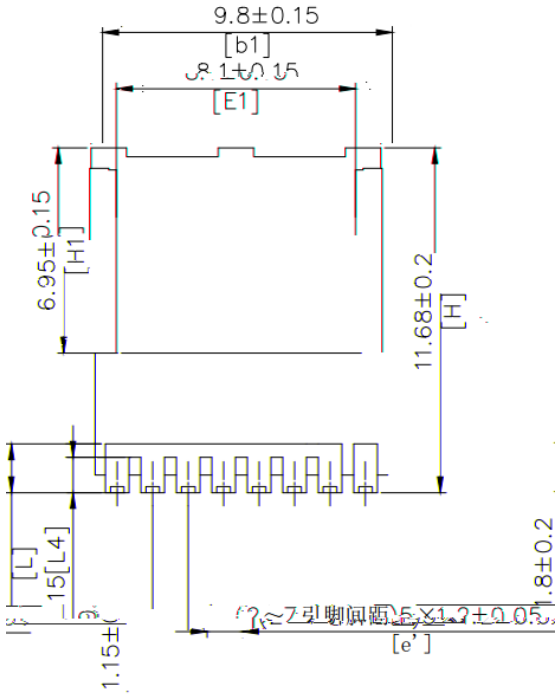
Device Per Unit

Package Type	Unit	Quantity
TOLL	Reel	1200

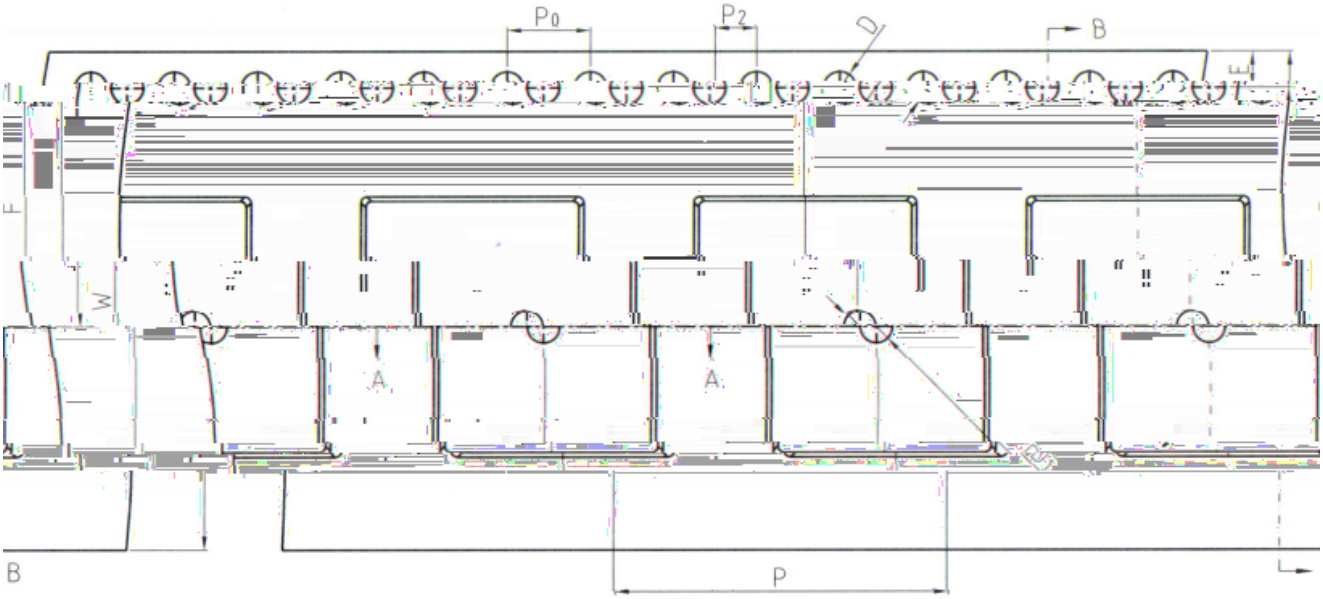
Package Information

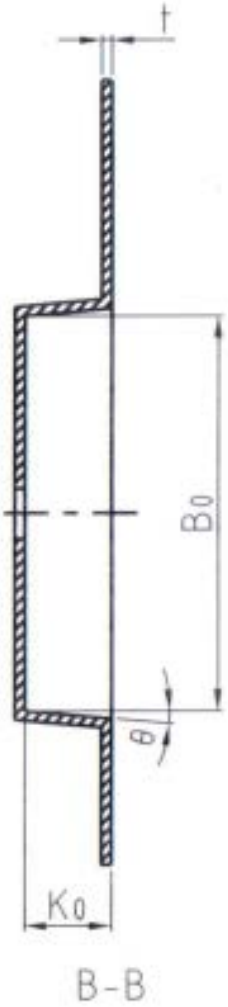
TOLL





Carrier Tape





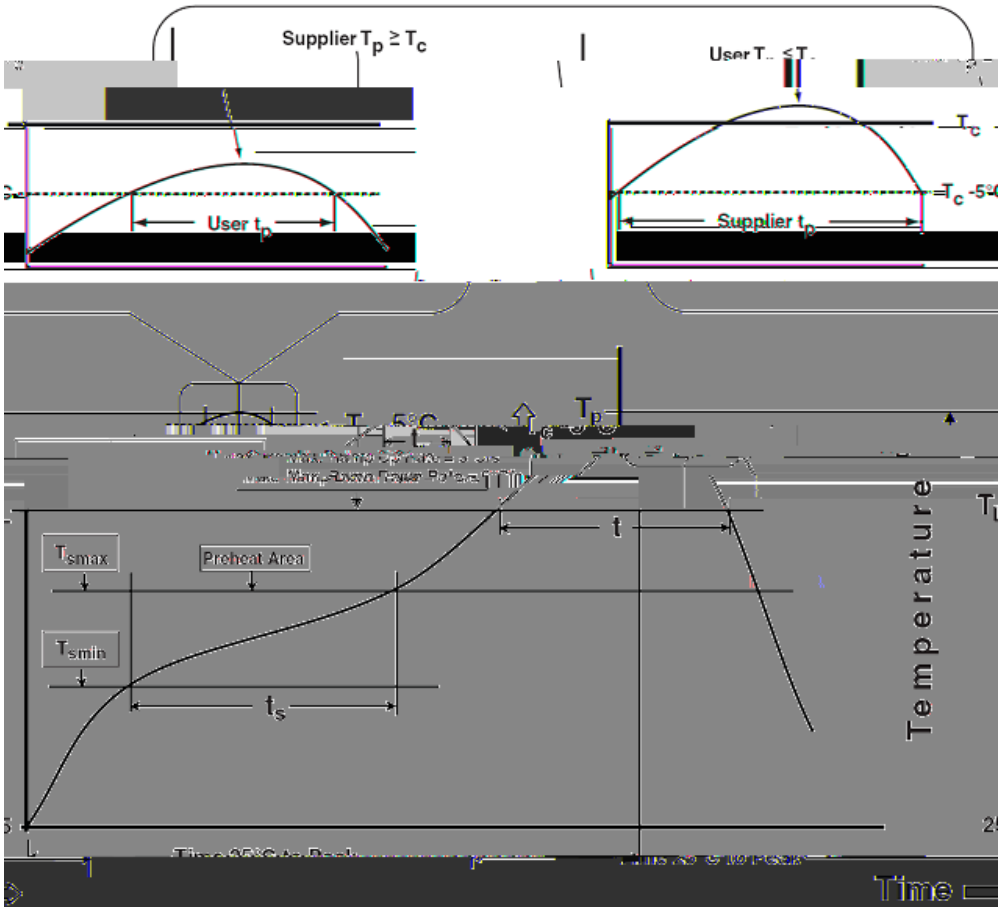
共同尺寸

外观	尺寸 (MM)
E	1.75±0.10
F	11.50±0.10
P_2	2.00±0.10
D	1.55±0.05
D_1	1.55±0.05
P_0	4.00±0.10
10P_0	40.0±0.20

变动尺寸

外观	尺寸 (MM)
W	$24.00^{+0.3}_{-0.1}$
P	16.00±0.10
A_0	10.25±0.10
B_0	12.10±0.10
K_0	2.65±0.10
t	0.30±0.05
θ	5°TYP

Classification Profile



Classification Reflow Profiles

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat & Soak Temperature min (T_{smin}) Temperature max (T_{smax}) Time (Tsmin to Tsmax) (t_s)	100 °C 150 °C 60-120 seconds	150 °C 200 °C 60-120 seconds
Average ramp-up rate ($T_{smax}$to T_P)	3 °C/second max.	3°C/second max.
Liquidous temperature (T_L) Time at liquidous (t_L)	183 °C 60-150 seconds	217 °C 60-150 seconds
Peak package body Temperature (T_p)*	See Classification Temp in table 1	SeeClassification Tempin 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	85°C/85%RH 168Hrs
HTRB	JESD-22, A108	168/500/1000 Hrs, Bias @ 150°C
HTGB	JESD-22, A108	168/500/1000Hrs, V_{gs}100% @ 150°C
PCT	JESD-22, A102	96Hrs, 100%RH, 2atm, 121°C
TCT	JESD-22, A104	250/500/1000 Cycles, -55°C~150°C

CoC **100%**