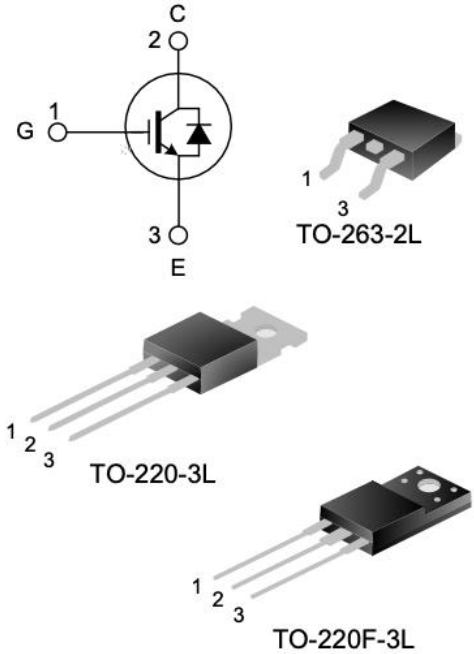





IGBT

- 650V/15A
 $V_{CE(sat)} = 1.60V(\text{typ.}) @ I_C = 15A$
- Positive temperature coefficient
- Fast Switching
- Low $V_{CE(sat)}$
- Reliable and Rugged
- Halogen Free and Green Devices Available (RoHS Compliant)



- Motor drives
- Boost
- PFC
- UPS

HYG15T65F1DHB	TO-263-2L	 B HYG15T65 XYMXXX	
HYG15T65F1DHP	TO-220-3L	 P HYG15T65 XYMXXX	
HYG15T65F1DHLF	TO-220F-3L	 LF HYG15T65 XYMXXX	

Note: HUAYI halogen free products contain molding compounds/die attach materials and 100% matte tin plate Termination finish; which are fully compliant with RoHS. HUAYI halogen free products meet or exceed the halogen free requirements of IPC/JEDEC J-STD-020 for MSL classification at halogen free peak reflow temperature. HUAYI defines "Green" to mean halogen 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).

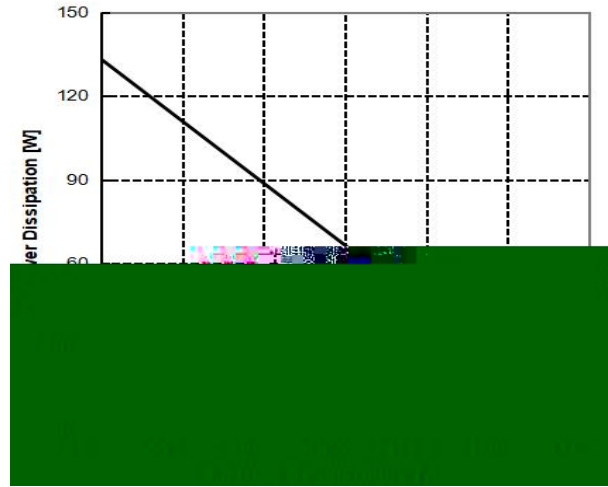
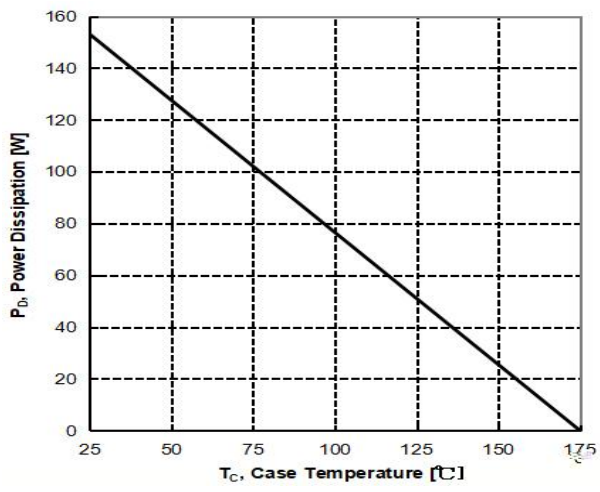
HUAYI reserves the right to make changes, corrections, enhancements, modifications, and improvements to this product and/or to this document at any time without notice.

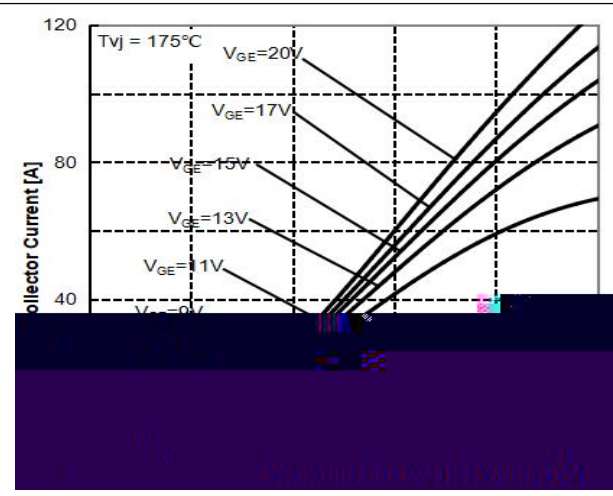
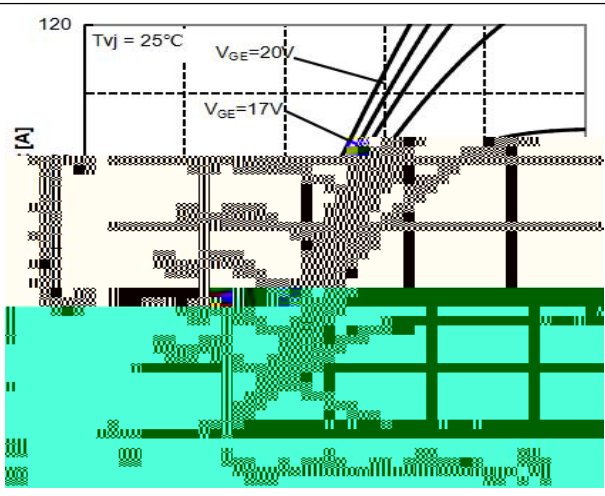
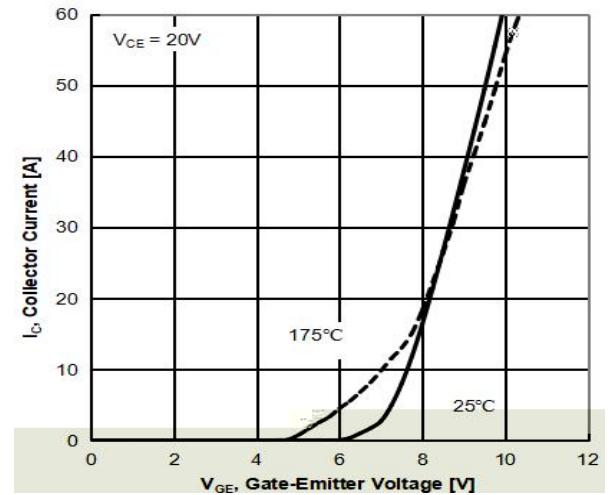
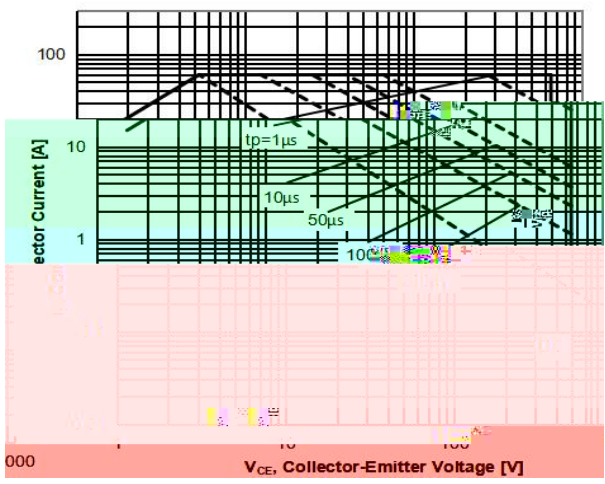
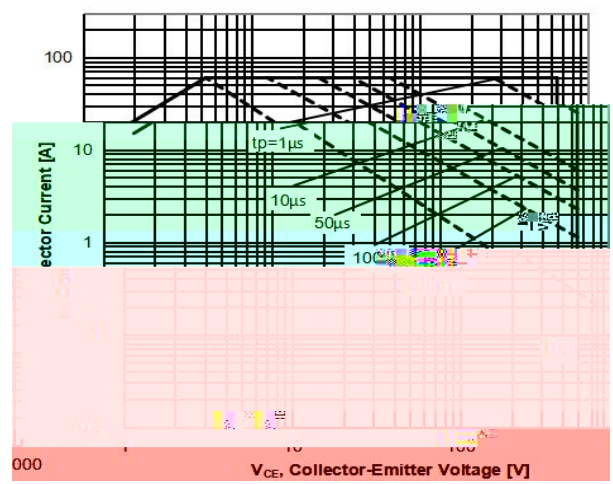
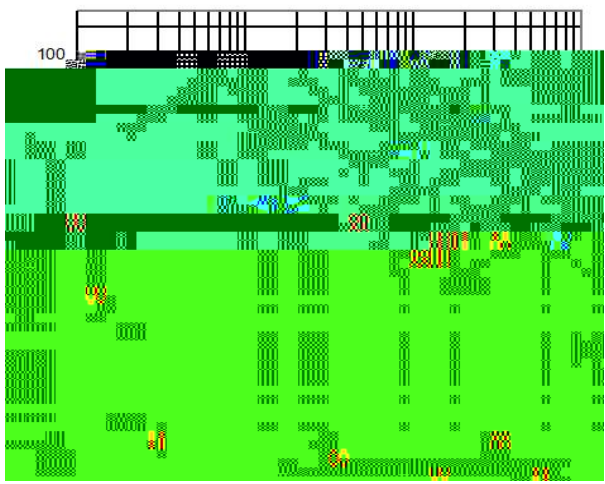
(Tc = 25°C Unless Otherwise Noted)			
VCES	Collector-Emitter Voltage	60	V
VGES	Gate-Emitter Voltage	5	V
TJ	Junction Temperature Range	-40 to 175	°C
TSTG	Storage Temperature Range	-40 to 175	°C
ICM	Pulsed Collector Current * <small>Tdsan</small>	60	A
IC	Continuous Drain Current	Tc=25°C	30 A
		Tc=100°C	15 A
IFM	Diode Maximum Forward Current *	Tc=25°C	60 A
		Tc=100°C	30 A
IF	Diode Continuous Forward Current	Tc=25°C	30 A
		Tc=100°C	15 A
RθJC	Thermal Resistance, Junction-to-Case (IGBT)	HYG15T65F1DHB	0.98 °C/W
		HYG15T65F1DHP	1.12 °C/W
		HYG15T65F1DHLP	3.10 °C/W
RθJC	Thermal Resistance, Junction-to-Case (Diode)	HYG15T65F1DHB	1.24 °C/W
		HYG15T65F1DHP	2.20 °C/W
		HYG15T65F1DHLP	3.34 °C/W
RθJA	Thermal Resistance, Junction-to-Ambient	HYG15T65F1DHB	62.5 °C/W
		HYG15T65F1DHP	62.5 °C/W
		HYG15T65F1DHLP	62.5 °C/W

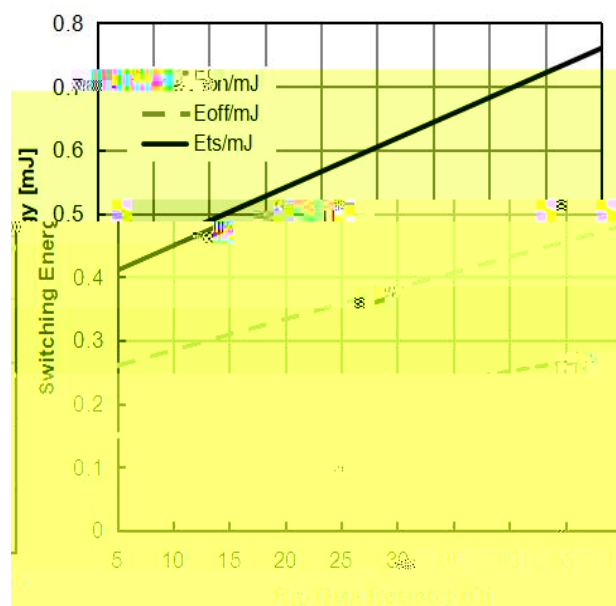
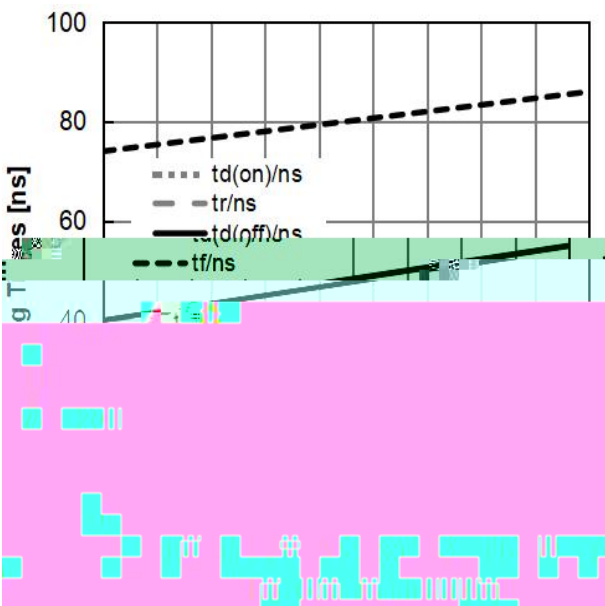
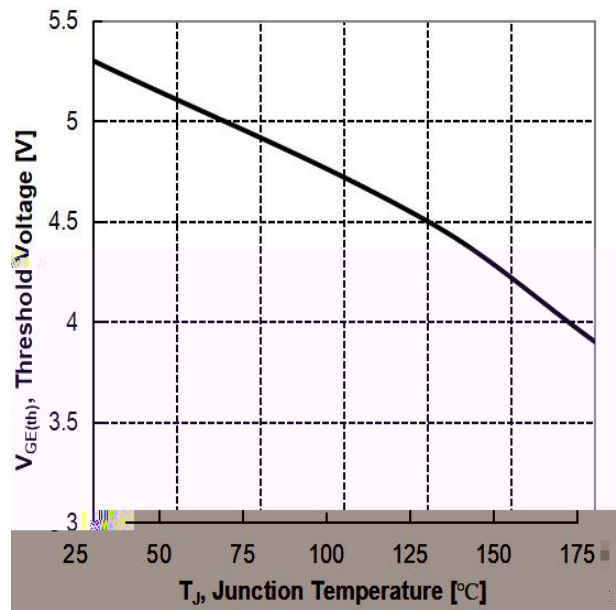
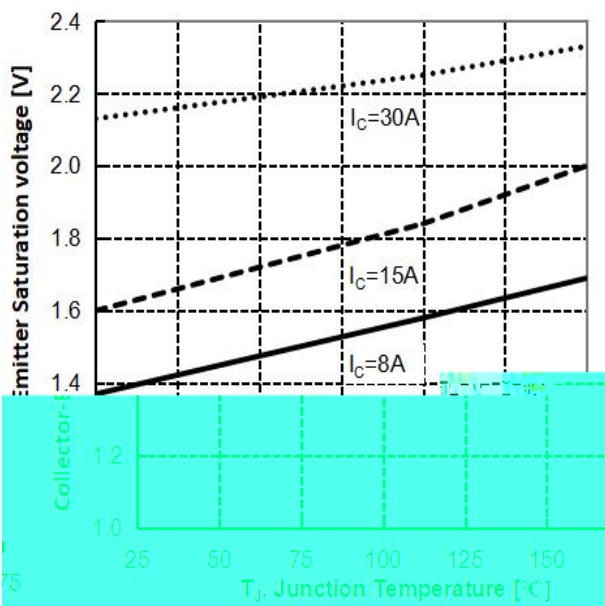
Note: * Repetitive rating: pulse width limited by max. junction temperature.

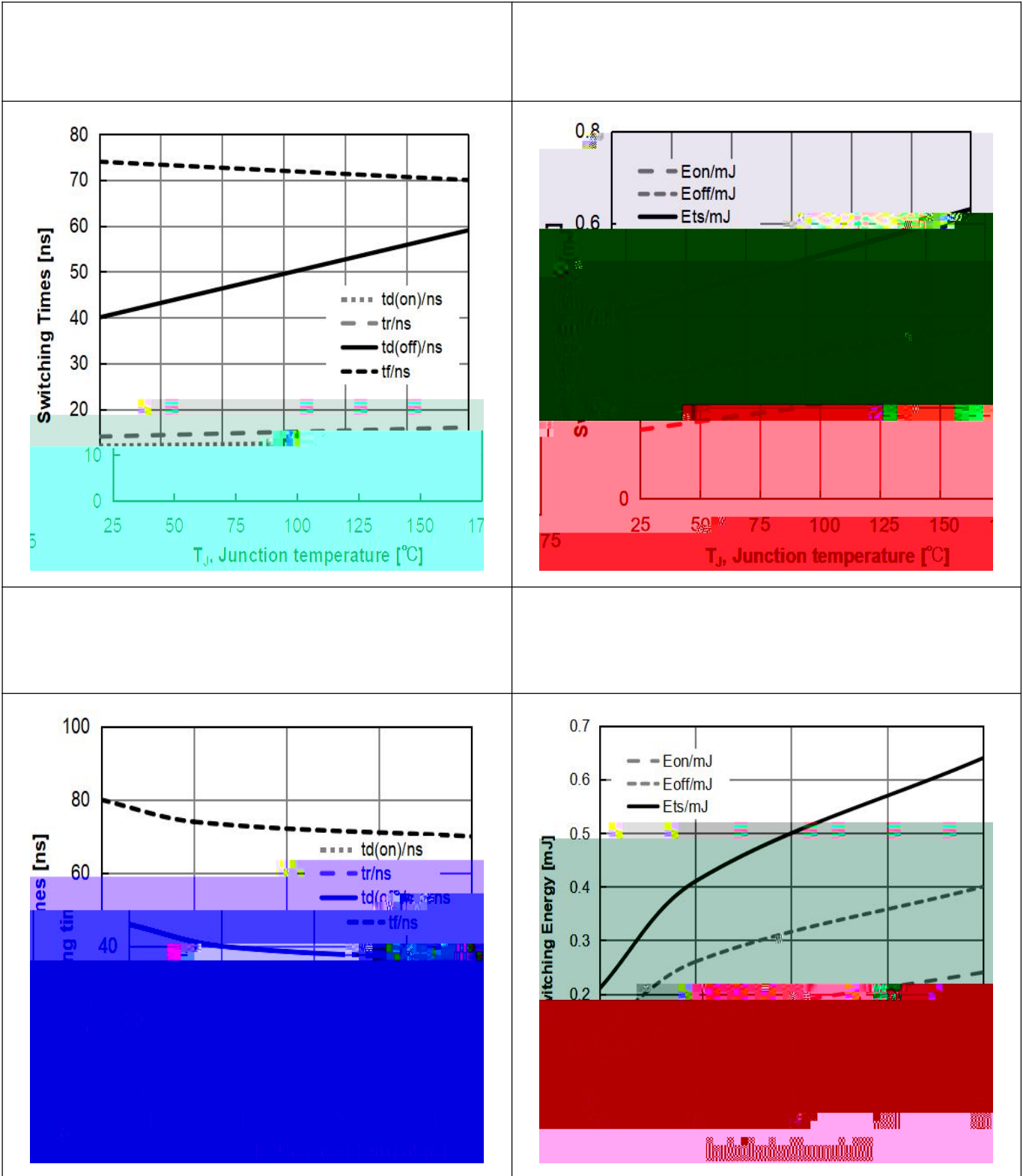
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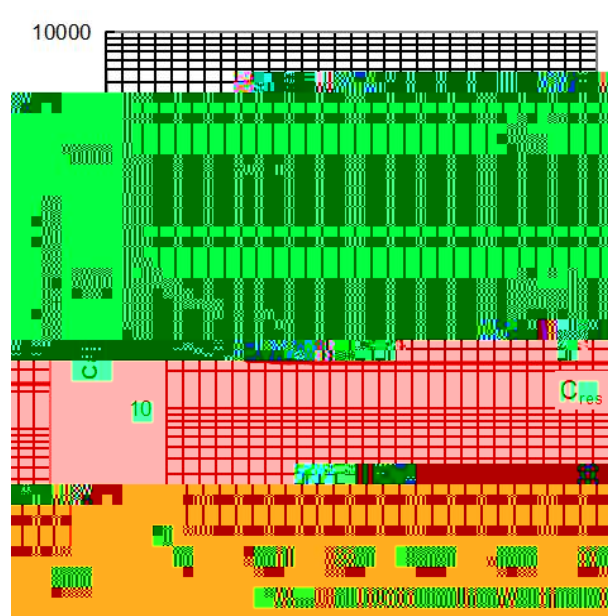
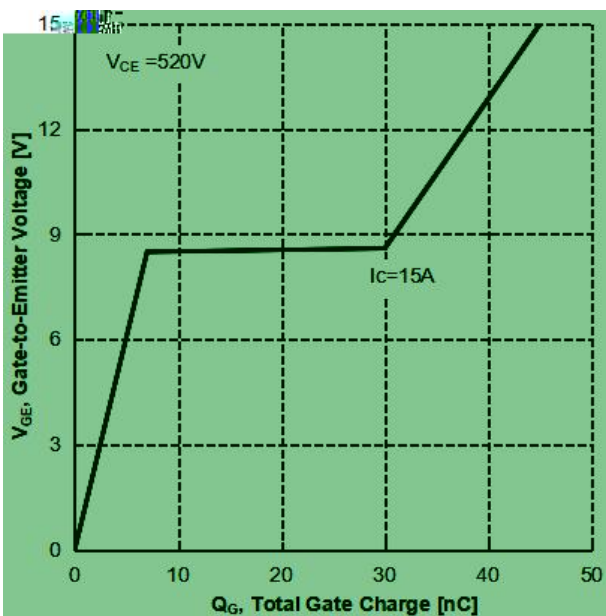
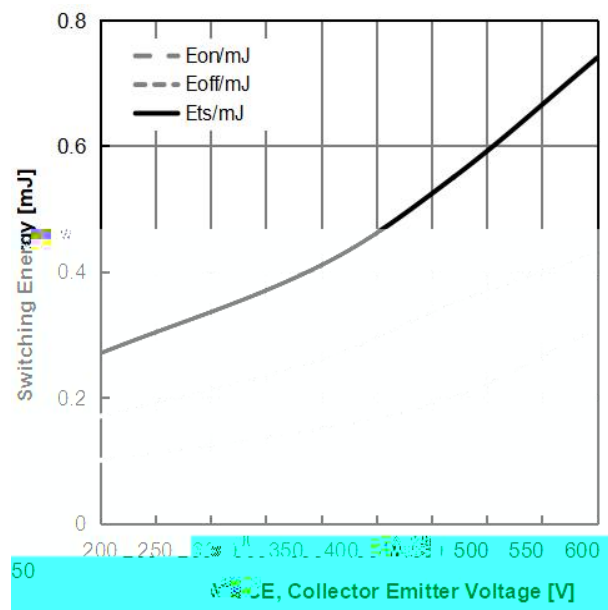
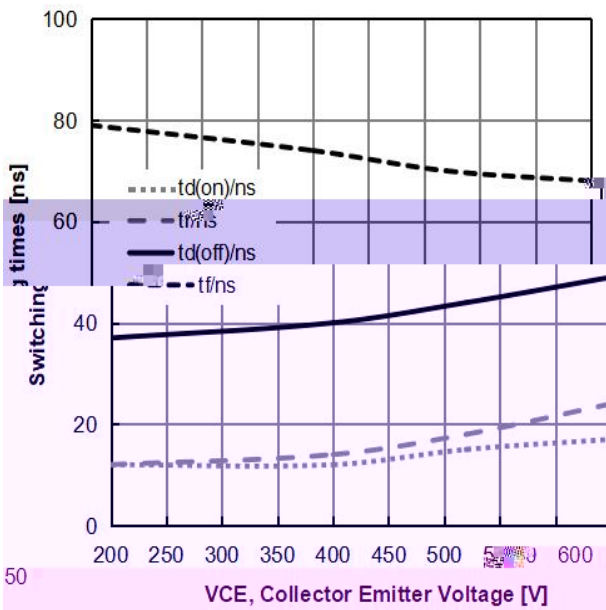
(Tc = 25°C Unless Otherwise Noted)

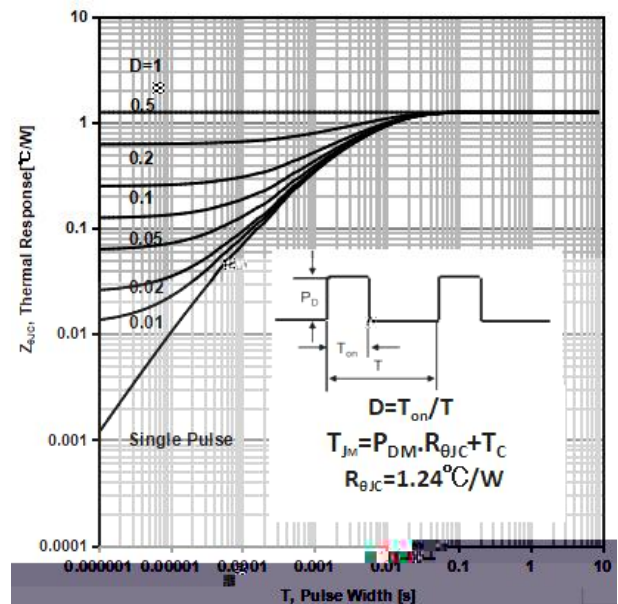
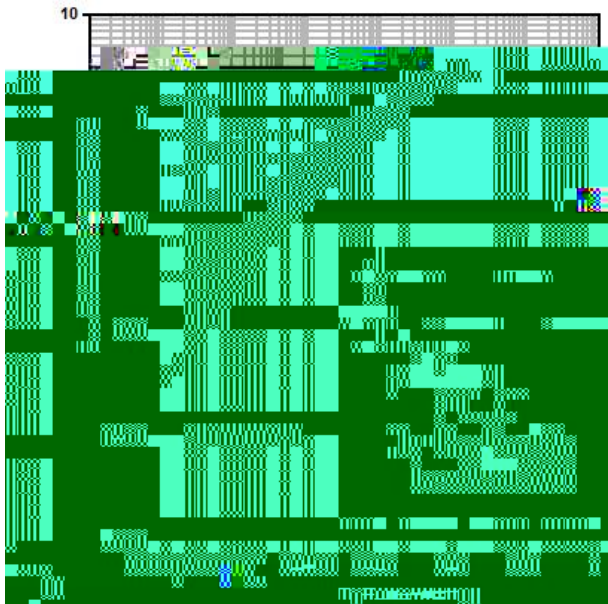
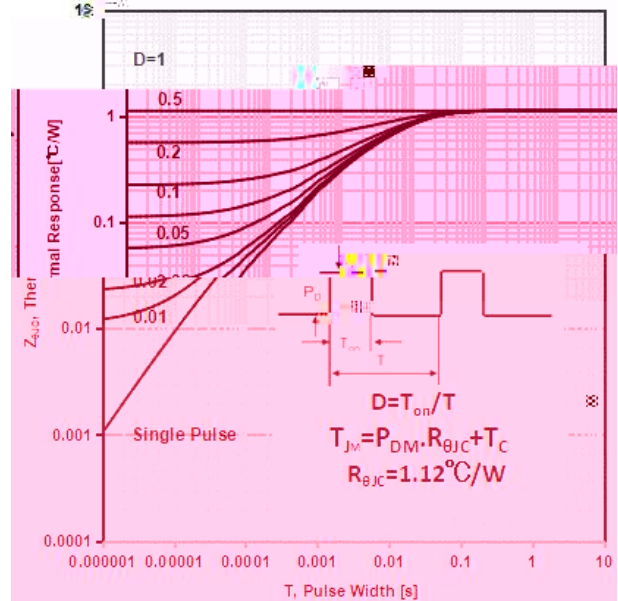
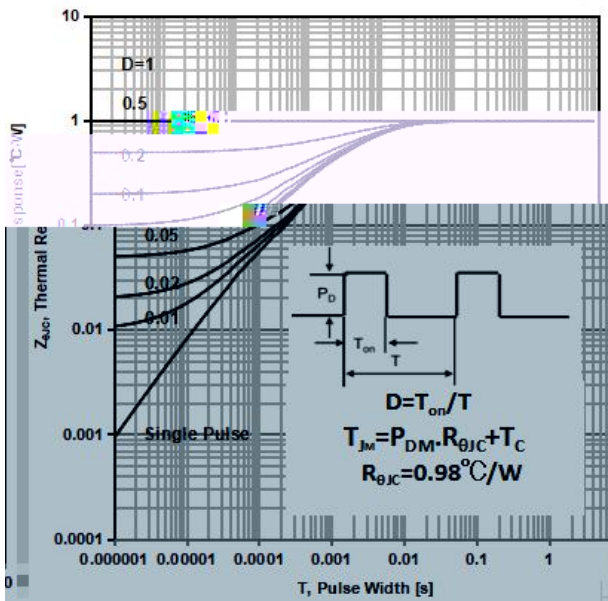


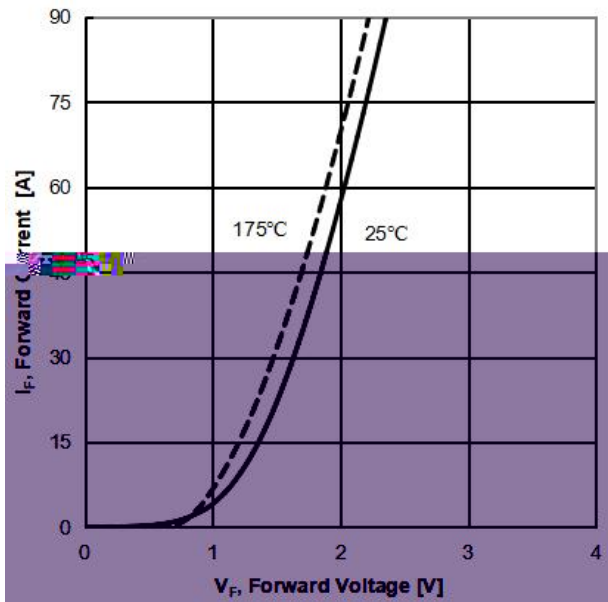
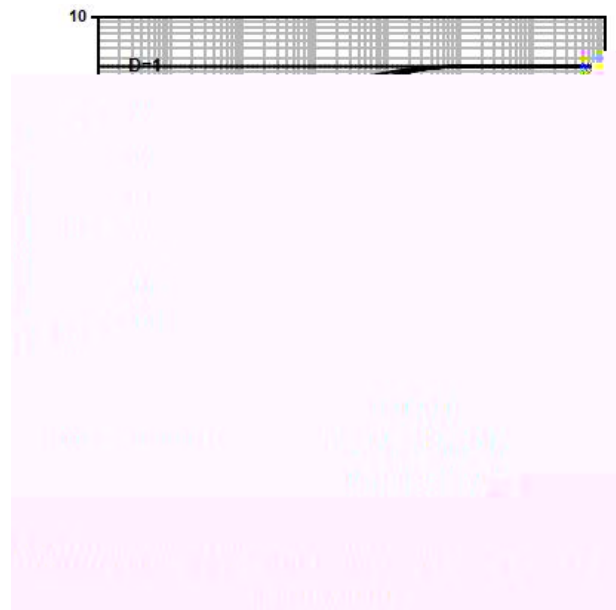
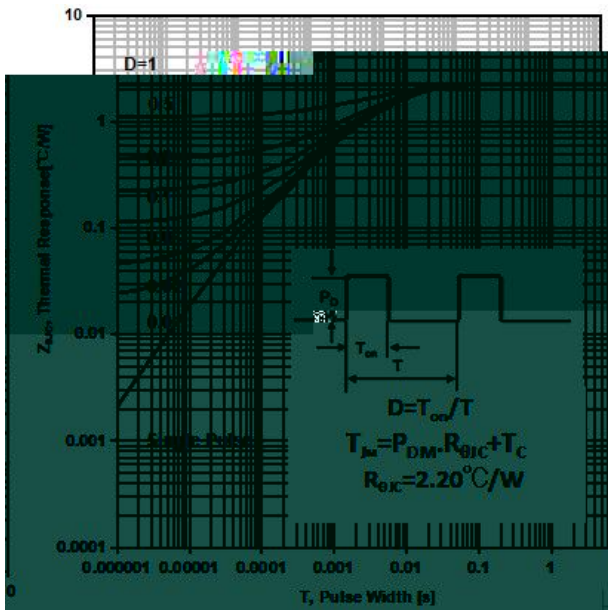


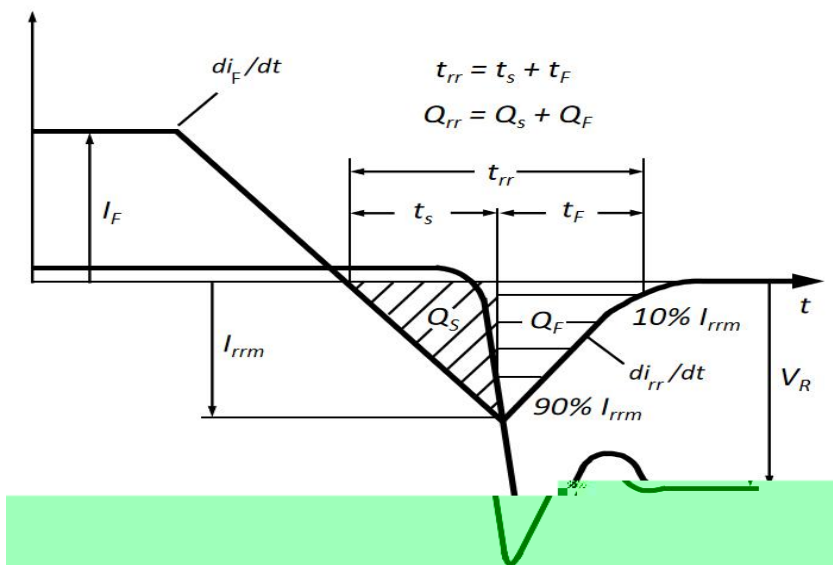
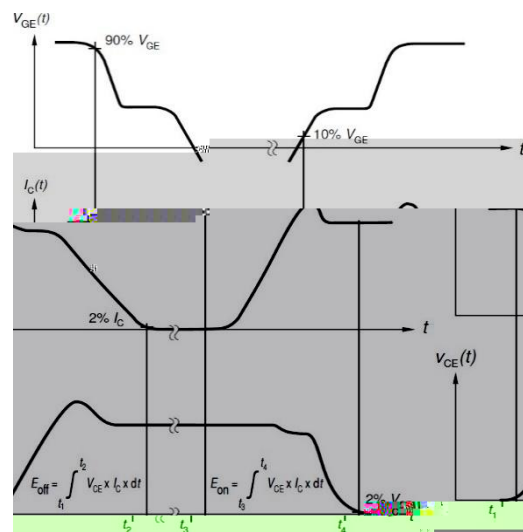
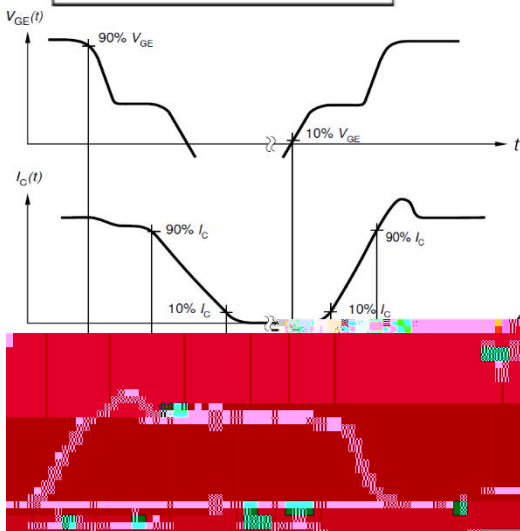
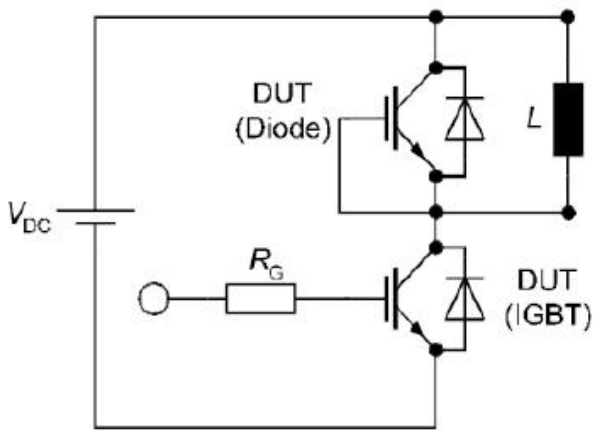




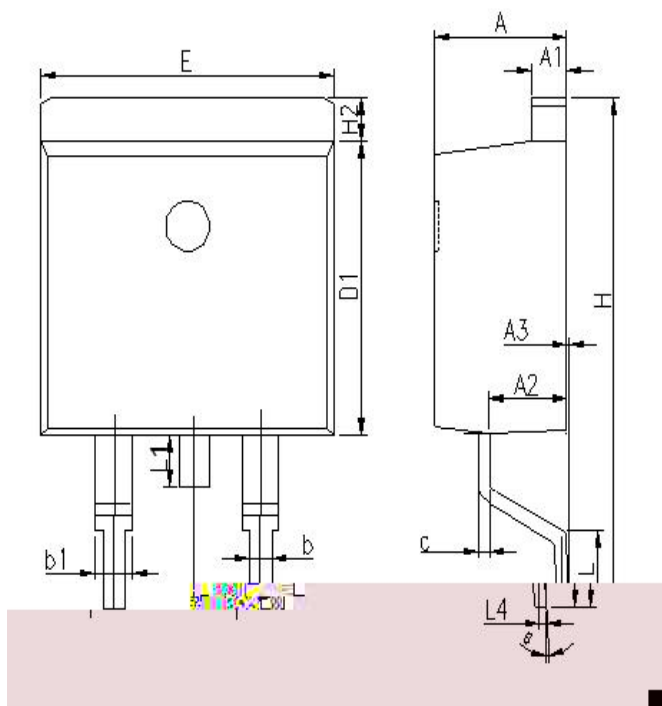
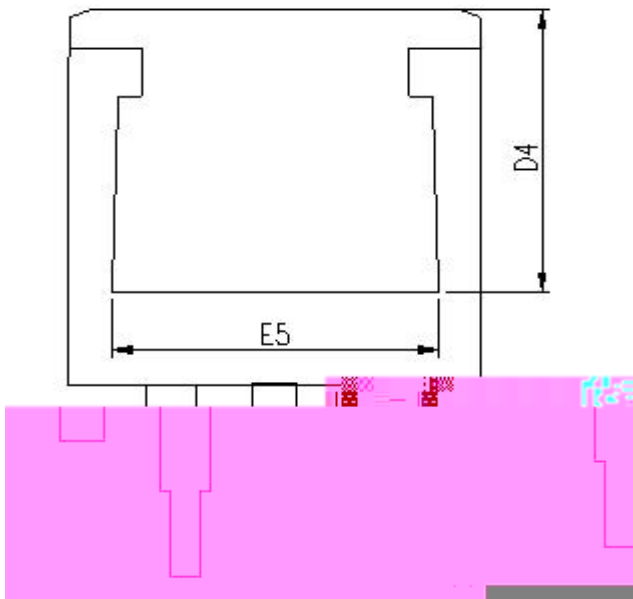






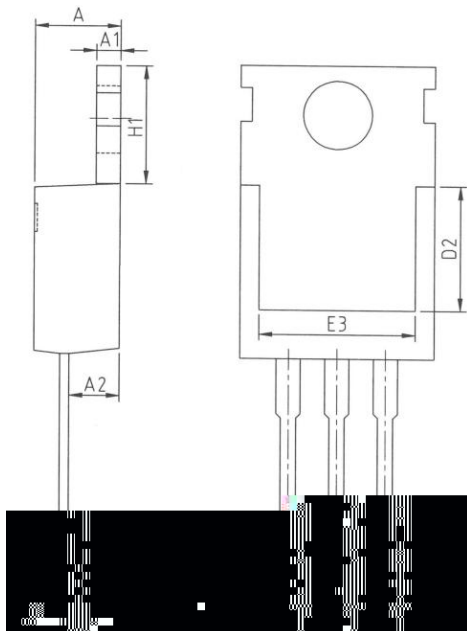
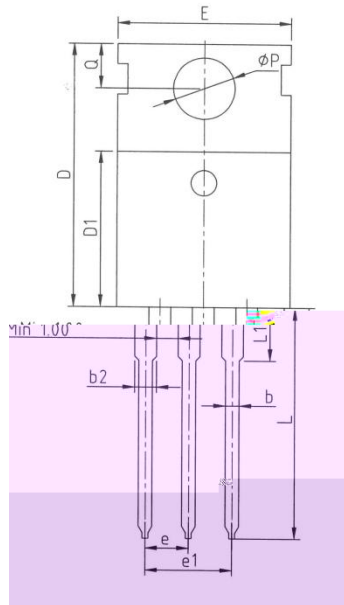


TO-263-2L	Reel	800
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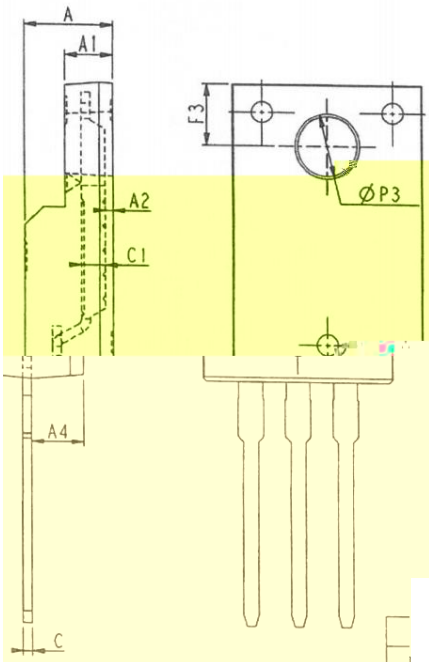
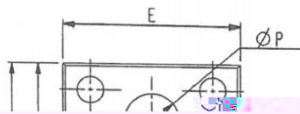
COMMON DIMENSIONS			
SYMBOL	mm		
	MIN	NOM	MIN
A	4.37	4.57	4.77
A1	1.22	1.27	1.42
A2	2.49	2.69	2.89
A3	0	0.13	0.25
b	0.70	0.81	0.96
b1	1.17	1.27	1.47
c	0.30	0.38	0.53
D1	8.50	8.70	8.90
D4	6.60	-	-
E	9.86	10.16	10.36
E5	7.06	-	-
e	2.54 BSC		
H	14.70	15.10	15.50
H2	1.07	1.27	1.47
L	2.00	2.30	2.60
L1	1.40	1.55	1.70
L4	0.25 BSC		
	0°	5°	9°

TO-220-3L	Tube	50

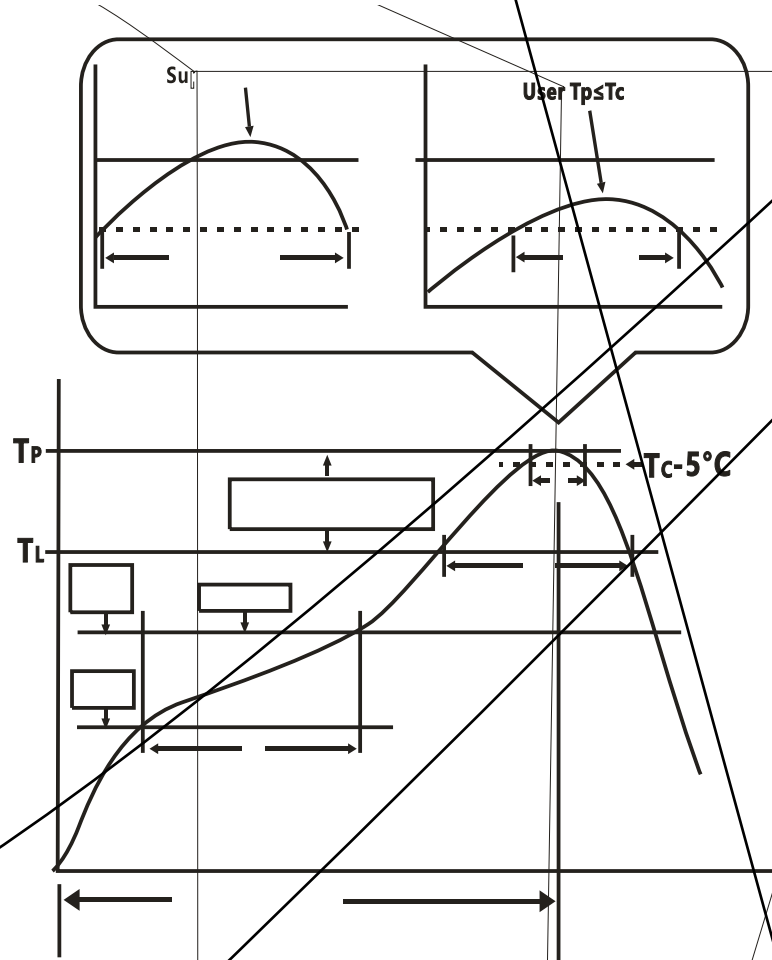


COMMON DIMENSIONS			
SYMBOL	mm		
	MIN	NOM	MIN
A	4.37	4.57	4.70
A1	1.25	1.30	1.40
A2	2.20	2.40	2.60
b	0.70	0.80	0.95
b2	1.17	1.27	1.47
c	0.45	0.50	0.60
D	15.10	15.60	16.10
D1	8.80	9.10	9.40
D2	5.50	6.30	7.10
E	9.70	10.00	10.30
E3	7.00	7.80	8.60
e	2.54 BSC		
e1	5.08 BSC		
H1	6.25	6.50	6.85
L	12.75	13.50	13.80
L1	-	3.10	3.40
P	3.40	3.60	3.80
Q	2.60	2.80	3.00

TO-220F-3L	Tube	50
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COMMON DIMENSIONS			
SYMBOL	mm		
	MIN	NOM	MIN
E	9.96	10.16	10.36
A	4.50	4.70	4.90
A1	2.34	2.54	2.74
A2	0.30	0.45	0.60
A4	2.56	2.76	2.96
c	0.40	0.50	0.60
c1	1.20	1.30	1.35
D	15.57	15.87	16.13
H1	6.48	6.70	6.90
e	2.54BSC		
L	12.68	12.98	13.28
L1	3.03	3.23	3.43
P	3.03	3.18	3.38
P3	3.15	3.45	3.65
F3	3.15	3.30	3.45
G3	1.25	1.35	1.47
b1	1.18	1.28	1.43
b2	0.70	0.80	0.91



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.Sn-Pb Eutectic Process – Classification Temperatures (T_c)

2.5 mm	235 °C	220 °C
2.5 mm	220 °C	220 °C

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

<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

HTRB	JESD-22, A108	168/500 Hrs, Bias @ 150°C
HTGB	JESD-22, A108	168 /500 Hrs, 100%VGE @ 150°C
PCT	JESD-22, A102	96 Hrs, 100%RH, 2atm, 121°C
TCT	JESD-22, A104	250/500 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: <http://www.hymexa.com/>