

IGBT

- 650V/3

G C E

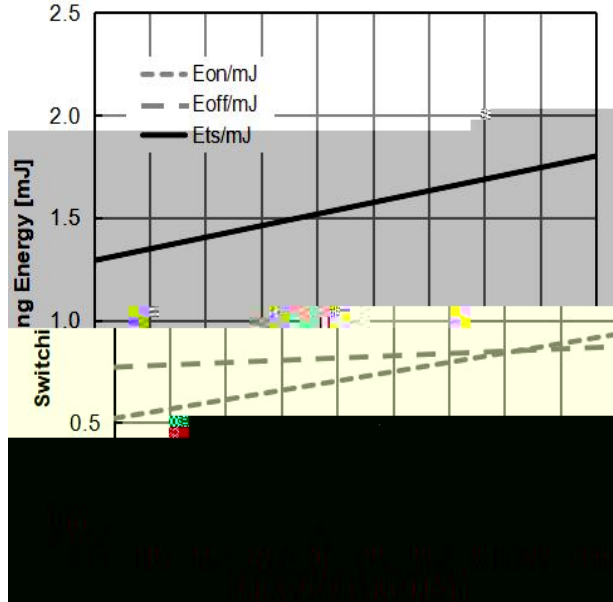
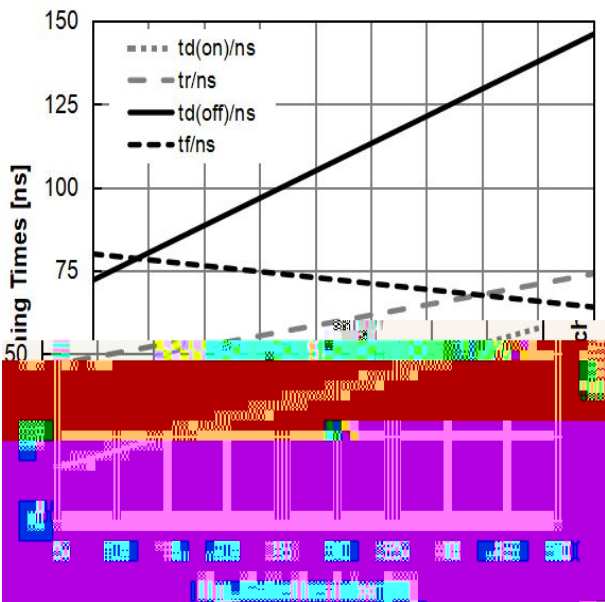
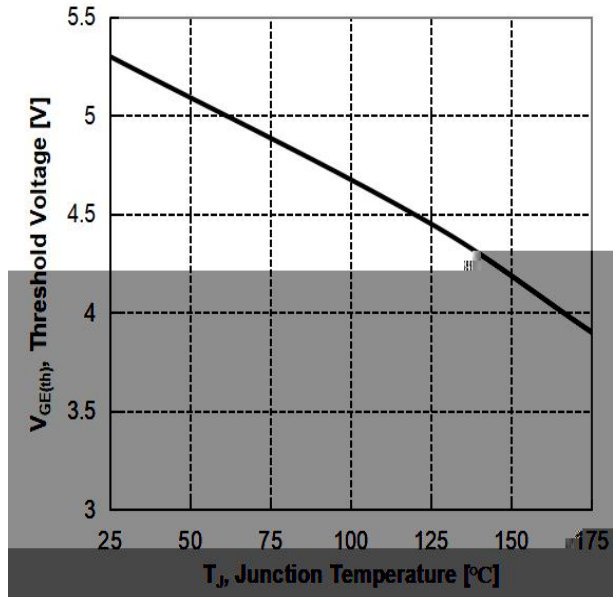
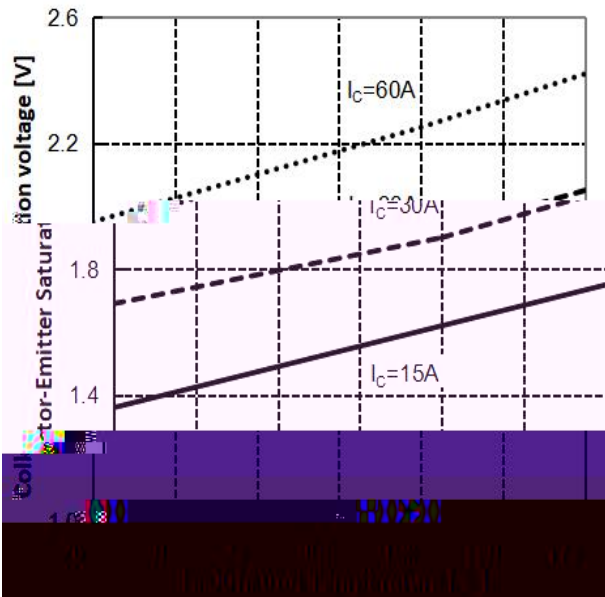
(T _c =25°C Unless Otherwise Noted)				
V _{CES}	Collector-Emitter Voltage		650	V
V _{GES}	Gate-Emitter Voltage		30	V
T _J	Junction Temperature Range		-55 to 175	°C
T _{STG}	Storage Temperature Range			°C
I _{CM}	Pulsed Collector Current *	T _c =25°C	90	A
I _C	Continuous Drain Current	T _c =25°C	60	A
		T _c =100°C	30	A
I _{FM}	Diode Maximum Forward Current *	T _c =25°C	90	A
I _F	Diode Continuous Forward Current	T _c =25°C	60	A
		T _c =100°C	30	A
R _{θJC}	Thermal Resistance, Junction-to-Case (IGBT)		0.83	°C/W
R _{θJC}	Thermal Resistance, Junction-to-Case (Diode)		0.65	°C/W
R _{θJA}	Thermal Resistance, Junction-to-Ambient		40	°C/W

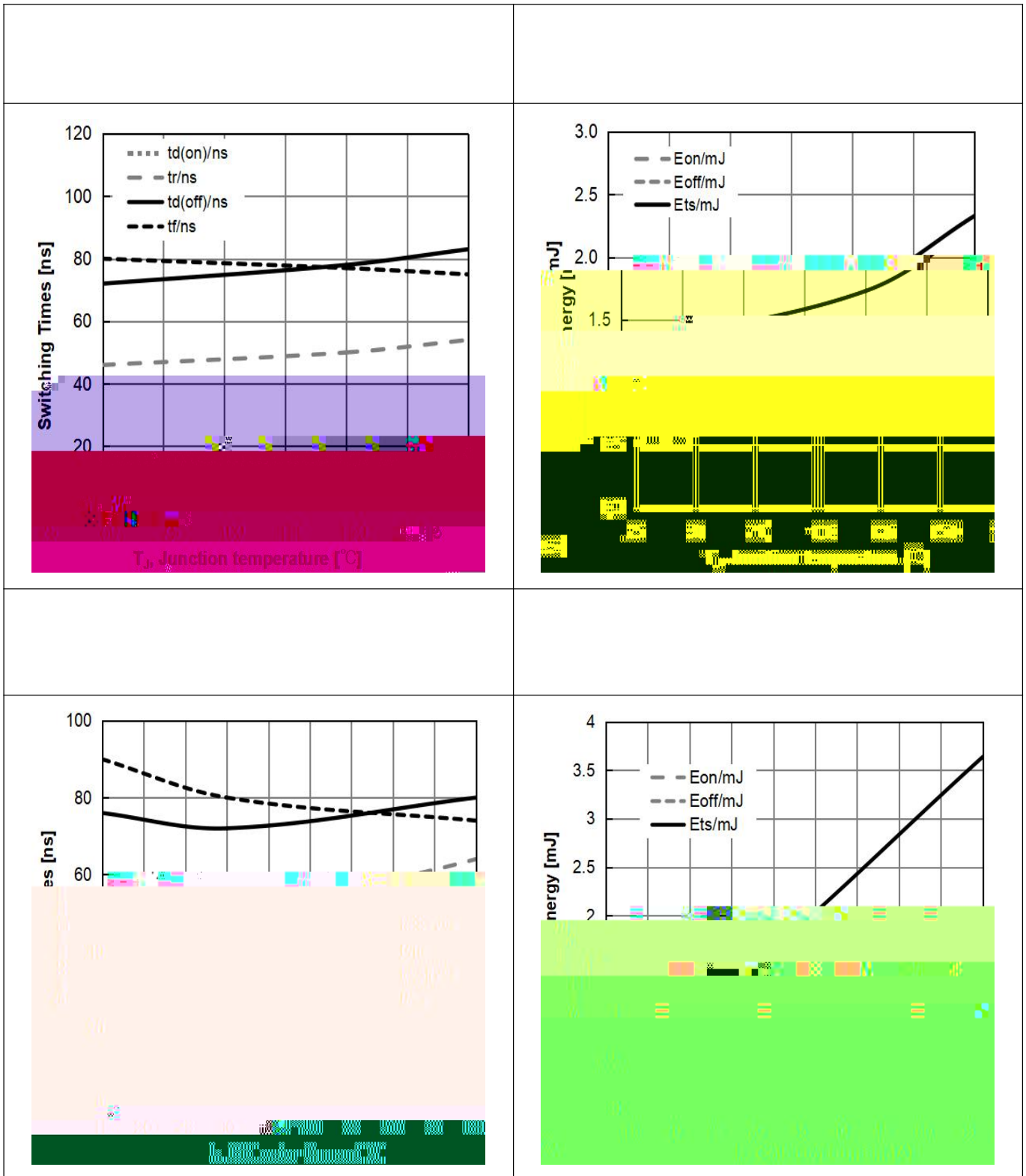
Note: * Repetitive rating: pulse width limited by max. junction temperature.

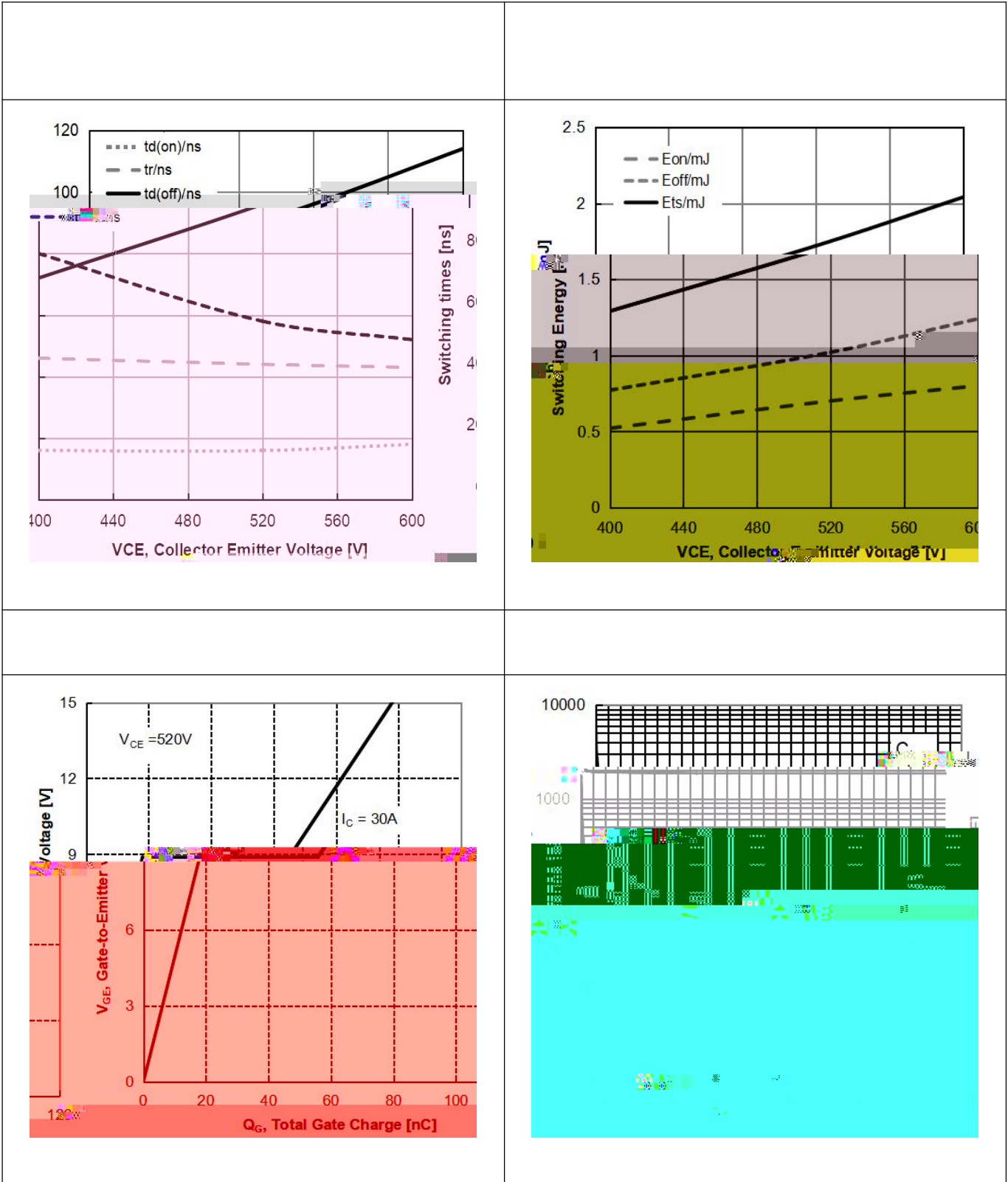
(T_c =25°C Unless Otherwise Noted)

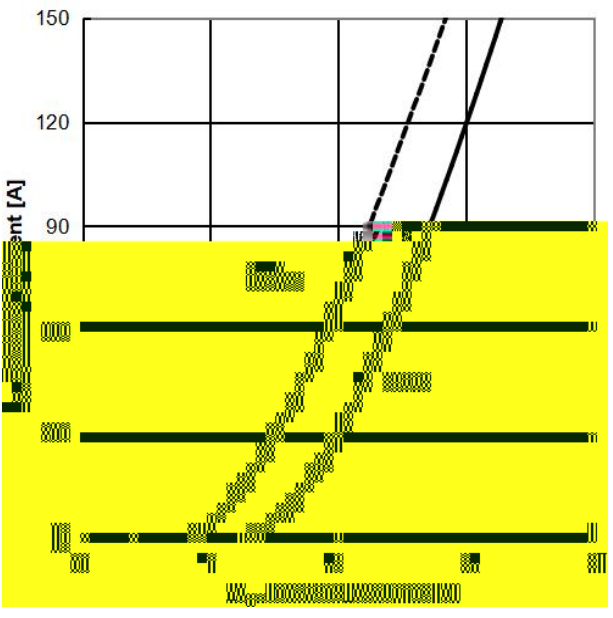
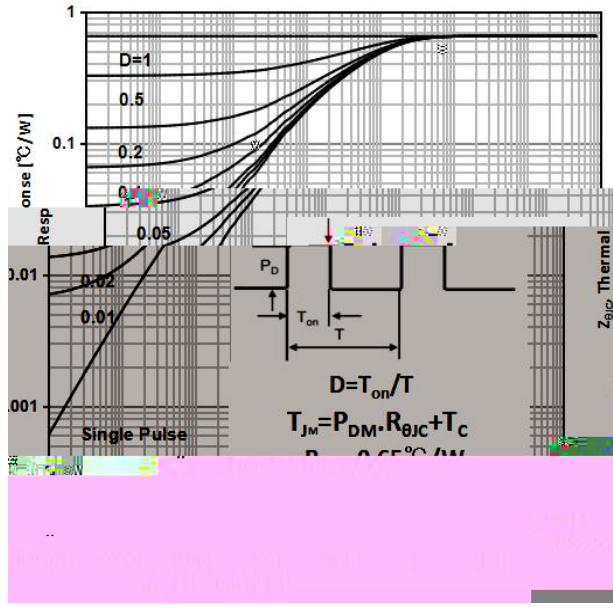
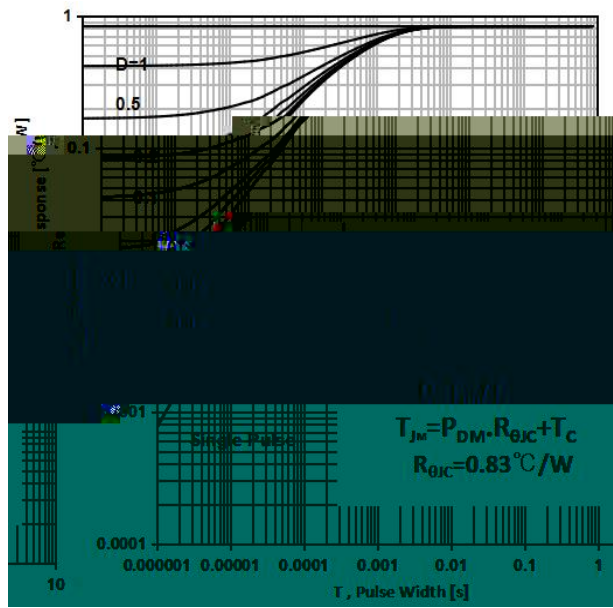
*						
BV _{CES}	Collector-Emitter Breakdown Voltage	V _{GE} =0V, I _C =250μA	650	-	-	V
I _{CES}	Collector-Emitter Leakage Current	V _{CE} =650V, V _{GE} =0V	-	-	10	μA
V _{GE(th)}	Gate Threshold Voltage	V _{CE} =V _{GE} , I _C =1mA	4.3	5.3	6.3	V
I _{GES}	Gate-Emitter Leakage Current	V _{GE} = 20V, V _{CE} =0V	-	-	±200	nA
V _{CE(sat)}	Collector-Emitter Saturation Voltage	V _{GE} =15V, I _C =30A, T _J =25°C	-	1.69	2.00	V
		V _{GE} =15V, I _C =30A T _J =125°C	-	1.90	-	V
		V _{GE} =15V, I _C =30A T _J =175°C	-	2.05	-	V
V _F	Diode Forward Voltage	I _F =30A, T _J =25°C	-	2.00	2.30	V
		I _F =30A, T _J =125°C	-	1.70	-	V
		I _F =30A, T _J =175°C	-	1.50	-	V







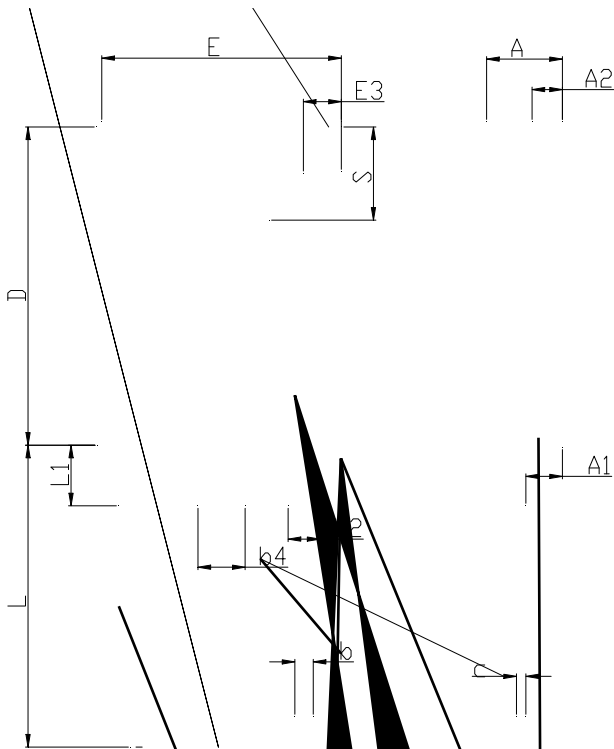




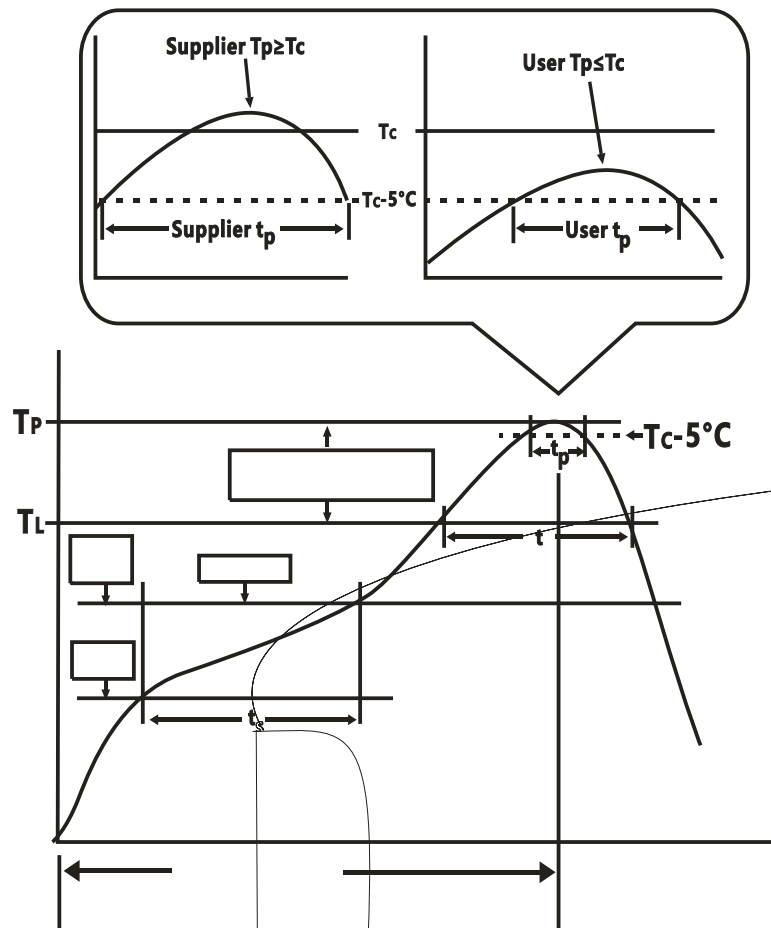
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TO-247-3L	Tube	30
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COMMON DIMENSIONS

SYMBOL	mm		
	MIN	NOM	MAX
A	4.80	5.00	5.20
A1	2.21	2.41	2.59
A2	1.85	2.00	2.15
b	1.11	1.21	1.36
b2	1.91	2.01	2.21
b4	2.91	3.01	3.21
c	0.51	0.61	0.75
D	20.70	21.00	21.30
D1	16.25	16.55	16.85
E	15.50	15.80	16.10
E1	13.00	13.30	13.60
E2	4.80	5.00	5.20
E3	2.30	2.50	2.70
e	5.44BSC		
L	19.62	19.92	20.22
L1	-	-	4.30
P	3.40	3.60	3.80
P1	-	-	7.30
S	6.15BSC		



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	96Hrs, 100%RH, 2atm, 121°C
TCT	JESD-22, A104	250/500 Cycles, -55°C~150°C

