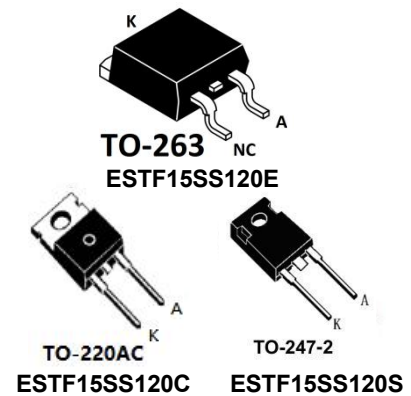


ESTF15SS120S/C/E

Fast Recovery

Diode Features

- Repetitive Reverse Voltage : $V_{RRM} = 1200V$
- Forward Voltage Drop : $V_{F(typ.)} = 1.9V$
- Average Forward Current : $I_{F(AV.)} = 15A @ T_c = 100^{\circ}C$
- Fast Reverse Recovery Time : $t_{rr(max.)} = 75ns$
- RoHS product



Applications

- Switching Power Supplies
- Power Switching Circuits
- General

Purpose • UPS



Absolute Maximum Ratings @ $T_c=25^{\circ}C$

Symbol	Parameter	ratings	Unit
V_{RRM}	Repetitive peak reverse voltage @50 μA	1200	V
V_{RWM}	Working Peak Reverse Voltage	1200	V
V_R	DC Blocking Voltage	1200	V
$I_{F(AV)}$	Average forward current @ $T_c=100^{\circ}C$	15	A
I_{FRM}	Repetitive Peak Surge Current	30	A
I_{FSM}	Peak one Cycle Surge Forward @ $t=10ms$	200	A
P_D	Maximum Power Dissipation(TO-263)	160	W
P_D	Maximum Power Dissipation(TO-220AC)	83	W
P_D	Maximum Power Dissipation(TO-247-2)	139	W
E_{AVL}	Avalanche Energy(See Figures 10 and 11)	20	mJ
T_j	Junction Temperature	-50~+150	$^{\circ}C$
T_{STG}	Storage temperature range	-50~+150	$^{\circ}C$

Electrical Specifications @ $T_c=25^{\circ}C$

Symbol	Parameter		Ratings			Unit
			Min	Typ	Max	
I_R	$T_j = 25^{\circ}C$	$V_R = V_{RRM}$			100	μA
	$T_j = 125^{\circ}C$				500	μA
V_F	$T_j = 25^{\circ}C$	$I_F = 20A$		1.9	2.5	V
	$T_j = 125^{\circ}C$				2.2	V

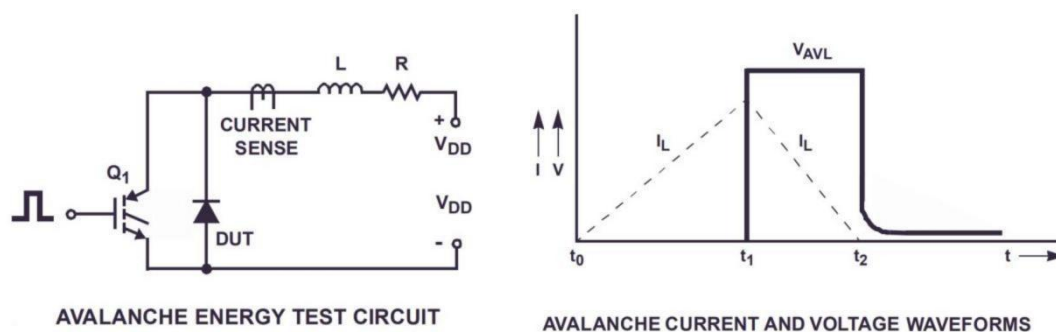
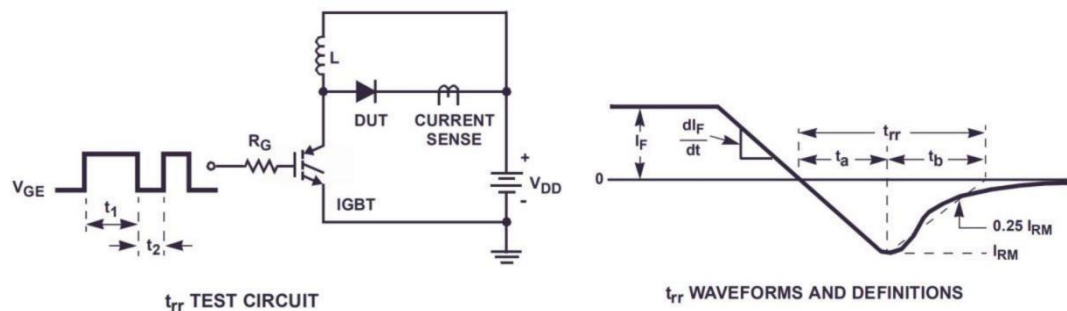
t_{rr}	$I_F=1A, di_F/dt=100A/\mu s, V_R=30V$			65	ns
	$I_F=15A, di_F/dt=100A/\mu s, V_R=30V$			75	ns

t_a	$I_F=15A, di_F/dt=100A/\mu s, V_R=30V$		36		ns
t_b	$I_F=15A, di_F/dt=100A/\mu s, V_R=30V$		28		ns
Q_{rr}	$I_F=15A, di_F/dt=100A/\mu s, V_R=600V$		150		nC
C_J	$V_R=10V, I_F=0A$		55		pF
$R_{th(j-c)}$	Thermal resistance from junction to case	TO-247-2L		0.9	$^{\circ}C/W$
$R_{th(j-c)}$		TO-220C-2L		1.5	$^{\circ}C/W$
$R_{th(j-c)}$		TO-263		0.8	$^{\circ}C/W$

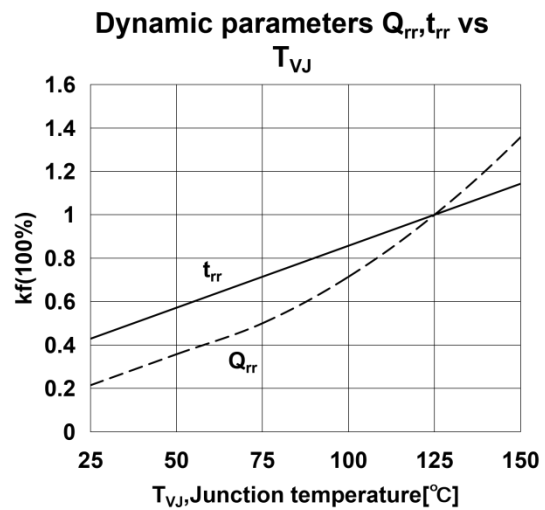
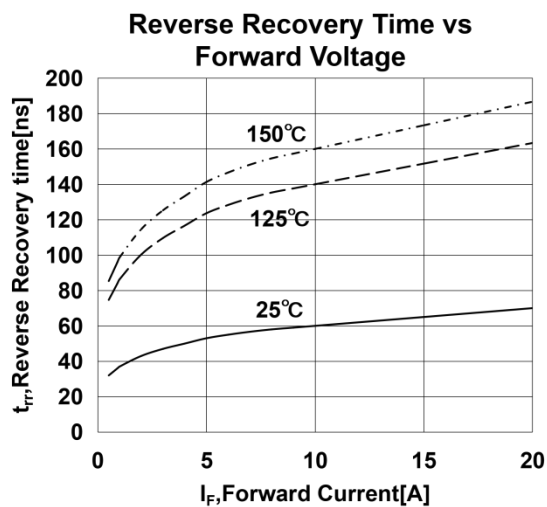
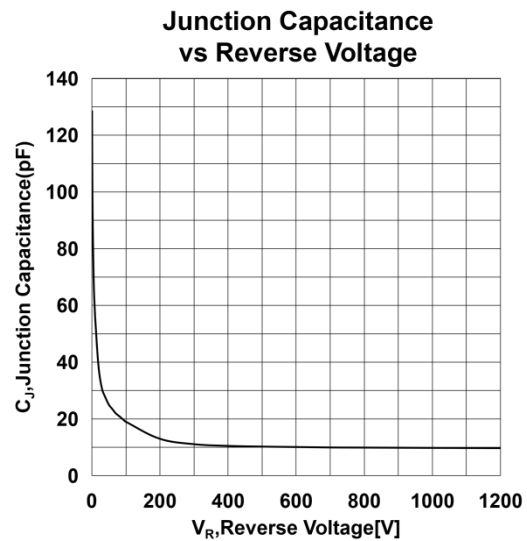
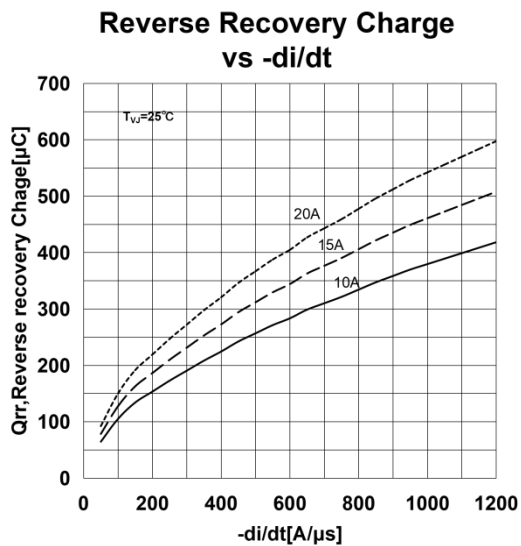
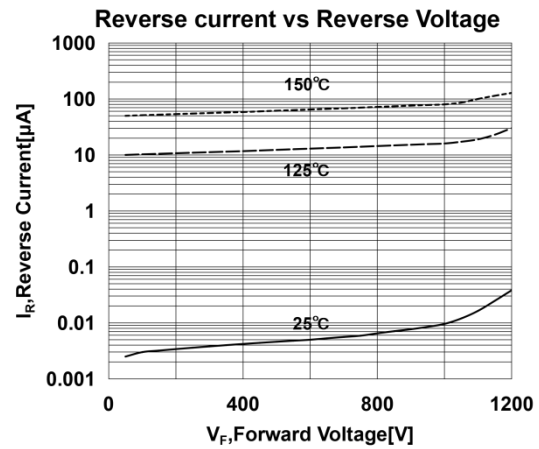
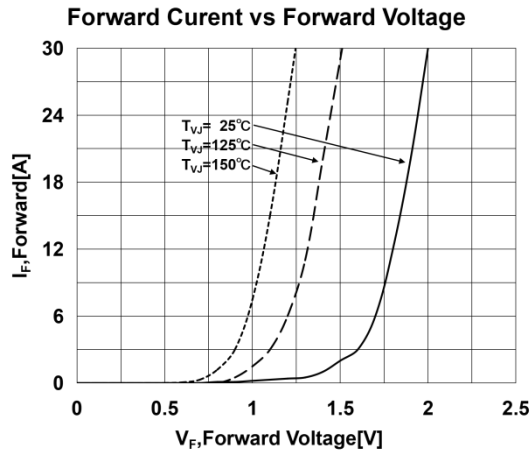
Order Information

Order codes	Silkscreen	Package	Packaging
ESTF15SS120C	F15S120C	TO-220C-2L	
ESTF15SS120S	F15S120S	TO-247-2L	
ESTF15SS120E	F15S120E	TO-263	

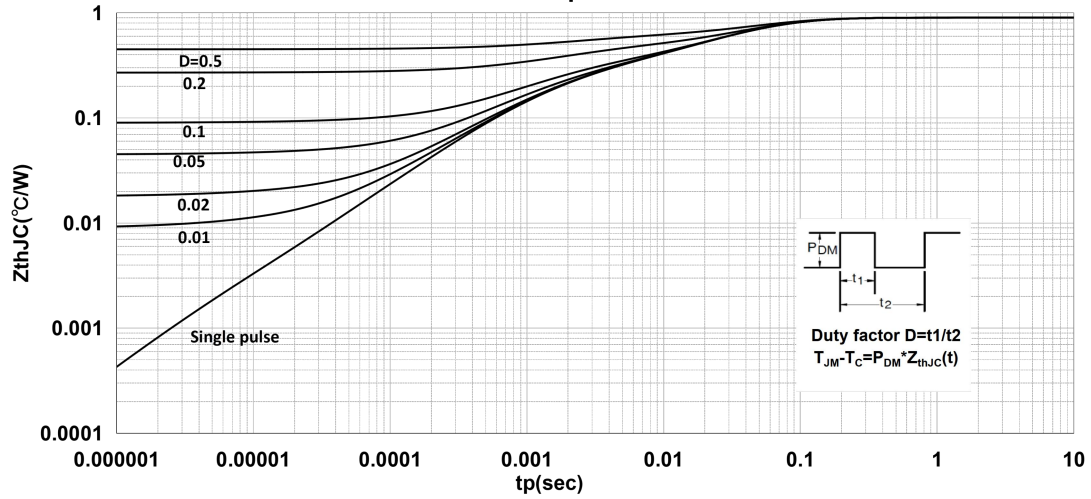
Test Circuits and Waveform



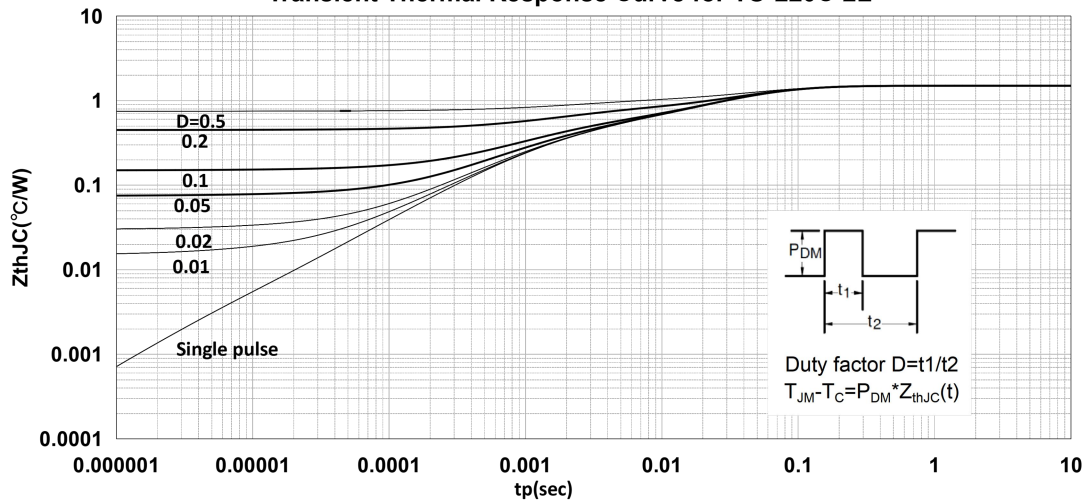
Typical Performance Curves



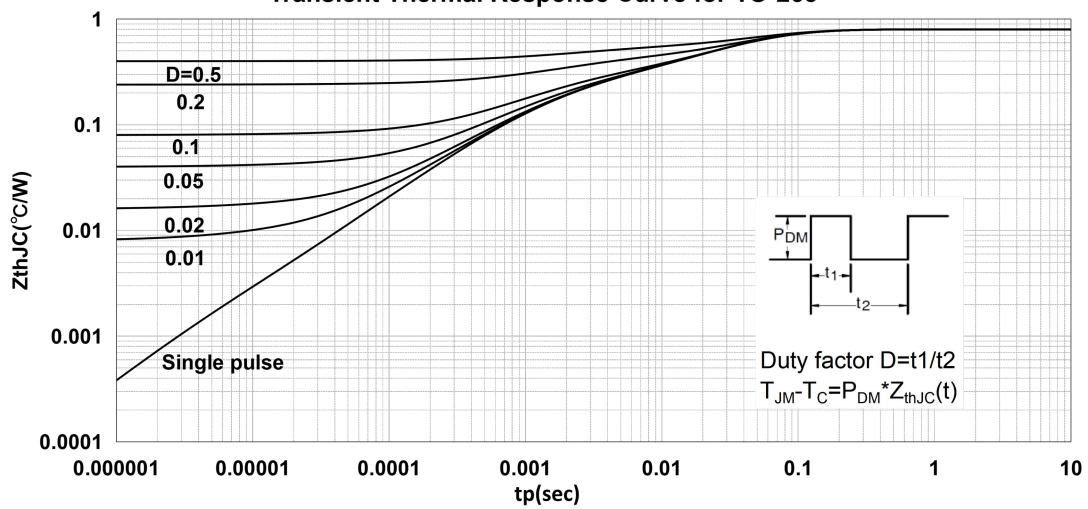
Transient Thermal Response Curve for TO-247-2L



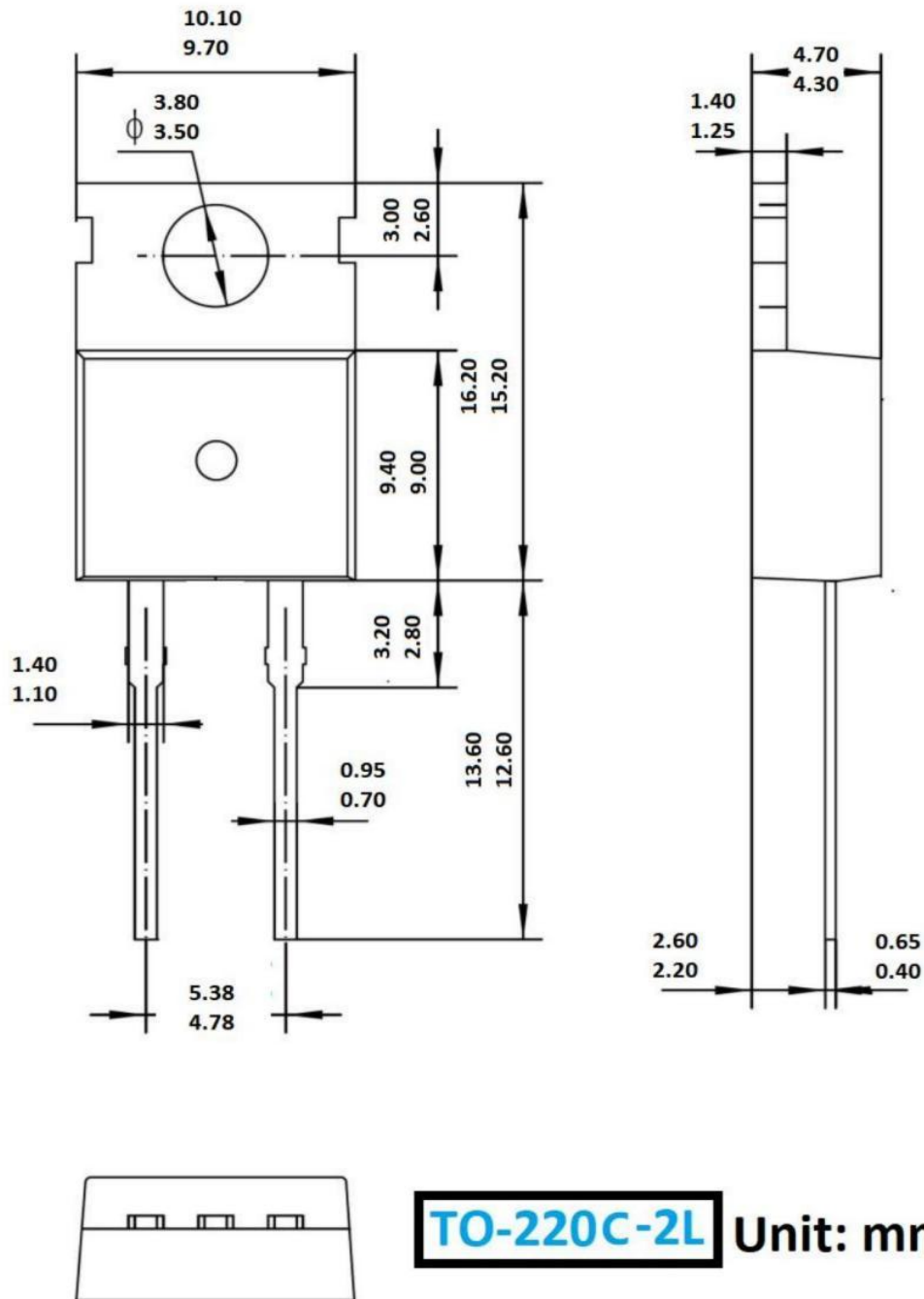
Transient Thermal Response Curve for TO-220C-2L

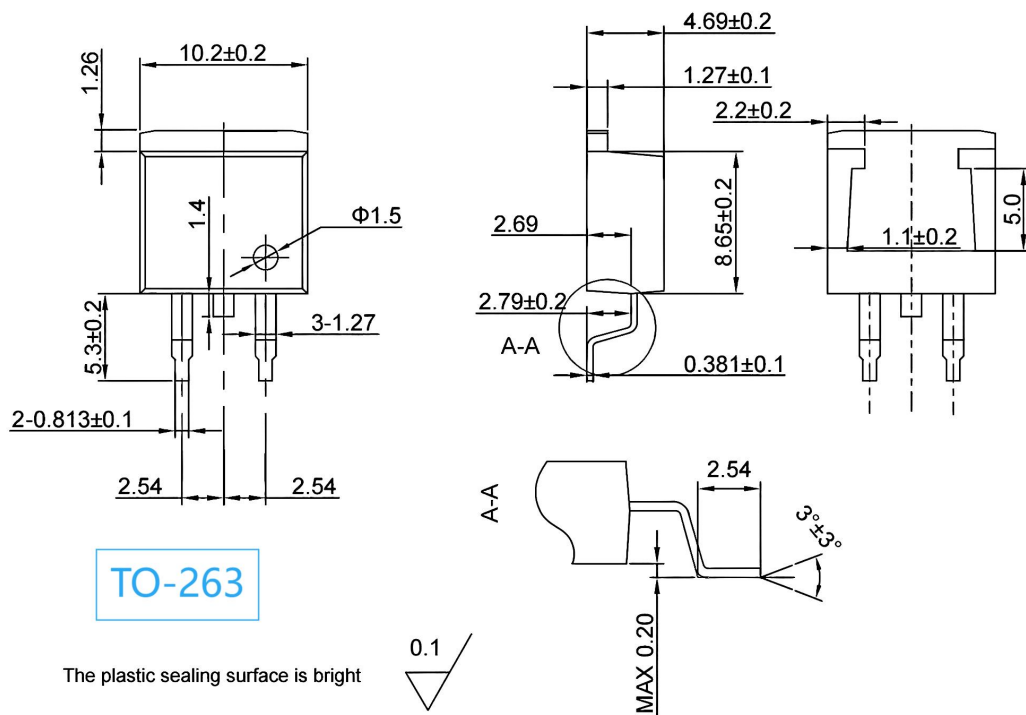
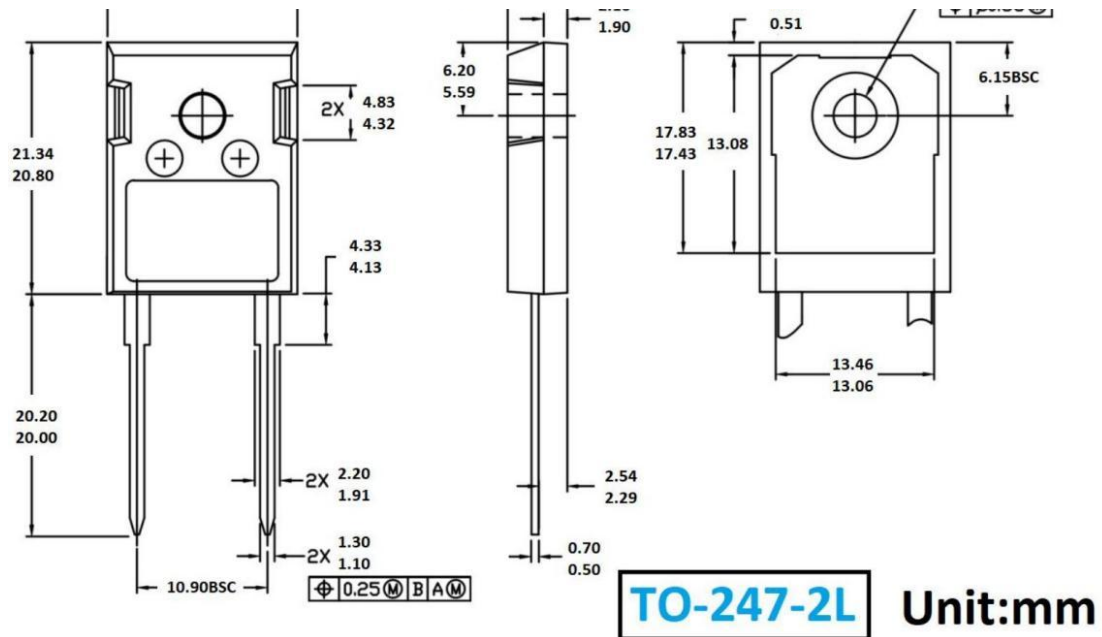


Transient Thermal Response Curve for TO-263



Package





Notes:

1. Unmarked tolerance ± 0.15 mm; unmarked R < 0.15 mm
2. The resin body is not allowed to have defects, shrinkage holes, cracks, bubbles and other harmful defects
3. The drawing indicates that the leg has reinforcement
4. Unit : mm