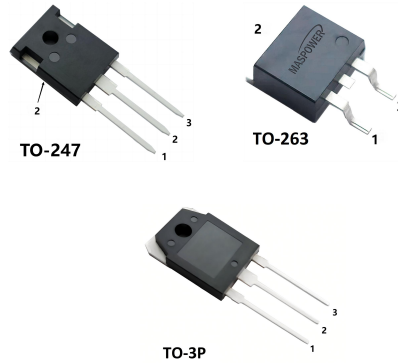


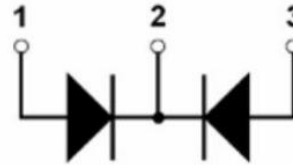
Features

- Ultra fast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current



Applications

- Freewheeling, Snubber, Clamp
- Inversion Welder
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- UPS
- PFC



Absolute Maximum Ratings ($T_C=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Values	Unit
Maximum D.C. Reverse Voltage	V_R		300	V
Maximum Repetitive Reverse Voltage	V_{RRM}		300	
Average Forward Current	$I_{F(AV)}$	$T_C=100^{\circ}\text{C}$, Per Diode	30	A
		$T_C=100^{\circ}\text{C}$, Per Package	60	
RMS Forward Current	$I_{F(RMS)}$	$T_C=100^{\circ}\text{C}$, Per Diode	40	
Non-Repetitive Surge Forward Current	I_{FSM}	$T_C=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine	480	
Power Dissipation	P_D		156	W
Junction Temperature	T_J		-55~150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}		-55~150	
Module-to-Sink	T_{orque}	Recommended (M3)	1.1	N.m
Thermal Resistance(3PB/TO-247)	$R_{\theta JC}$	Junction-to-Case	0.8	$^{\circ}\text{C/W}$
Thermal Resistance(D2PAK)	$R_{\theta JC}$	Junction-to-Case	2.0	$^{\circ}\text{C/W}$

Electrical Characteristics($T_C=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Leakage Current	I_R	$V_R=300\text{V}$	-	-	10	μA
		$V_R=300\text{V}, T_C=125^{\circ}\text{C}$	-	-	10	mA
Forward Voltage	V_F	$I_F=30\text{A}$	-	1.25	1.8	V
		$I_F=30\text{A}, T_C=125^{\circ}\text{C}$	-	1.12	1.67	
		$I_F=30\text{A}, T_C=150^{\circ}\text{C}$	-	1.00	1.55	
Reverse Recovery Time	t_{rr}	$I_F=1\text{A}, V_R=30\text{V},$ $di_F/dt=-200\text{A}/\mu\text{s}$	-	22	-	ns
Reverse Recovery Time	t_{rr}	$V_R=150\text{V}, I_C=30\text{A}$ $di_F/dt=-200\text{A}/\mu\text{s}$	-	35	-	
Max. Reverse Recovery Current	I_{RRM}		-	2.5	-	A
Reverse Recovery Time	t_{rr}	$V_R=150\text{V}, I_F=30\text{A}$ $di_F/dt=-200\text{A}/\mu\text{s},$ $T_C=125^{\circ}\text{C}$	-	70	-	ns
Max. Reverse Recovery Current	I_{RRM}		-	6.8	-	A

Order Message

Order codes	Package	Packaging
ESTF60D33U	TO-247	Tube
ESTF60D33E	TO-263	Tube
ESTF60D33B	TO-3PN	Tube

Electrical characteristics(Curves)

Fig.1 – Forward Current Derating Curve

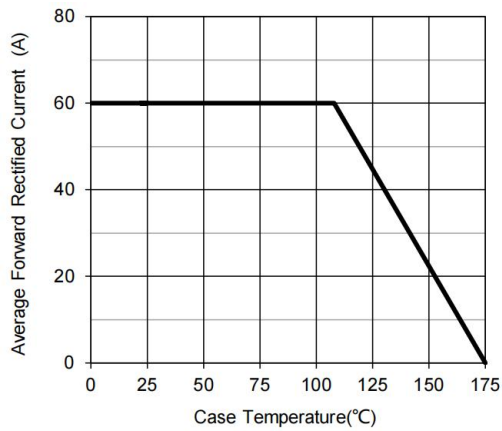


Fig.2 – Maximum Non-Repetitive Surge Current

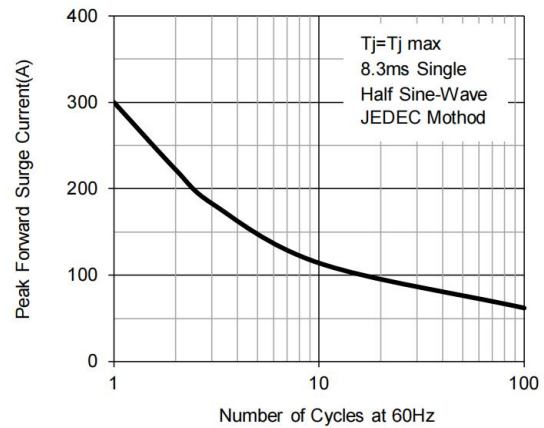


Fig.3 – Typical Forward Voltage Characteristics

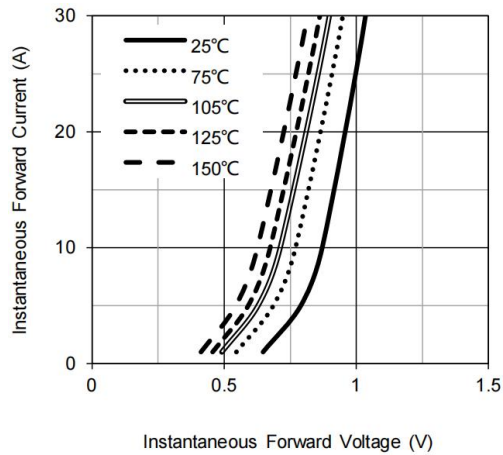


Fig.4 – Typical Reverse Current Characteristics

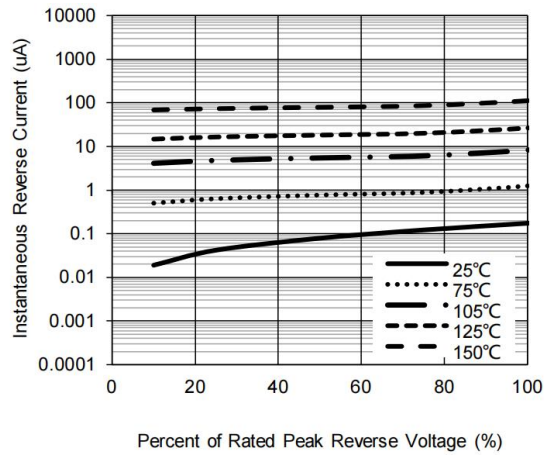
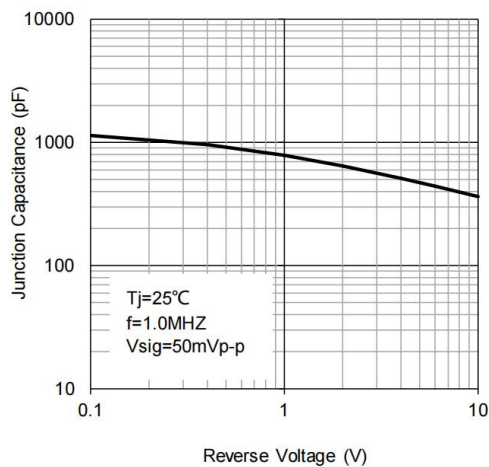
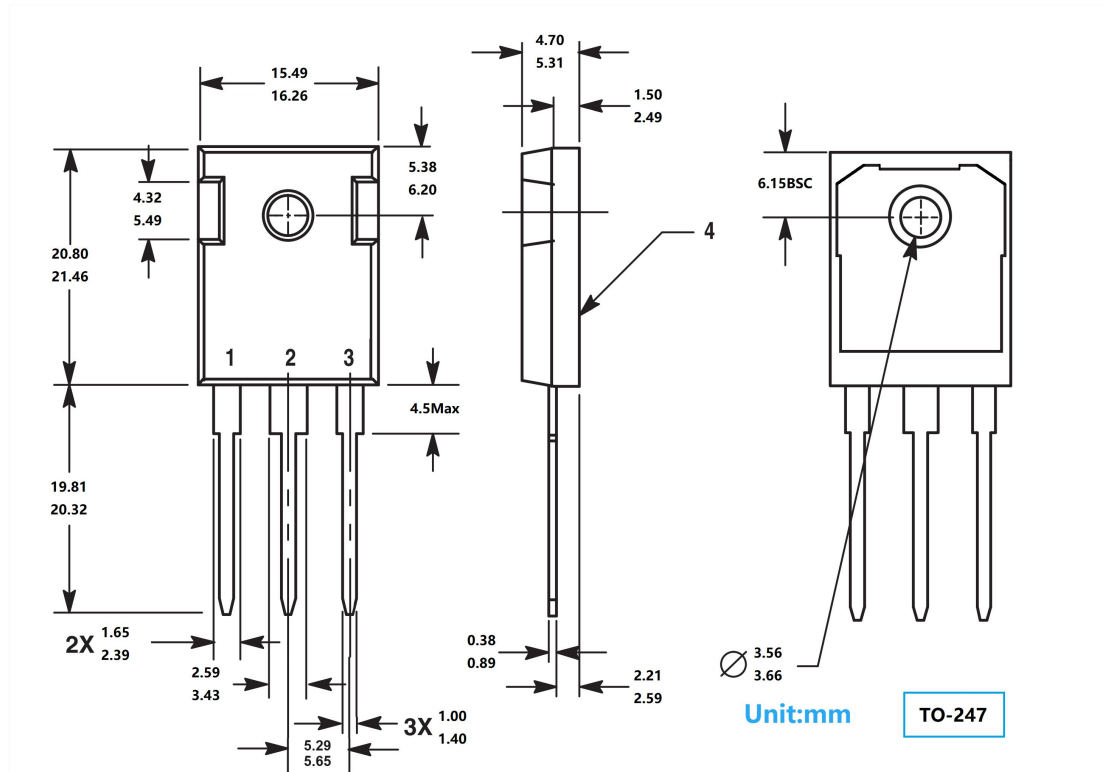
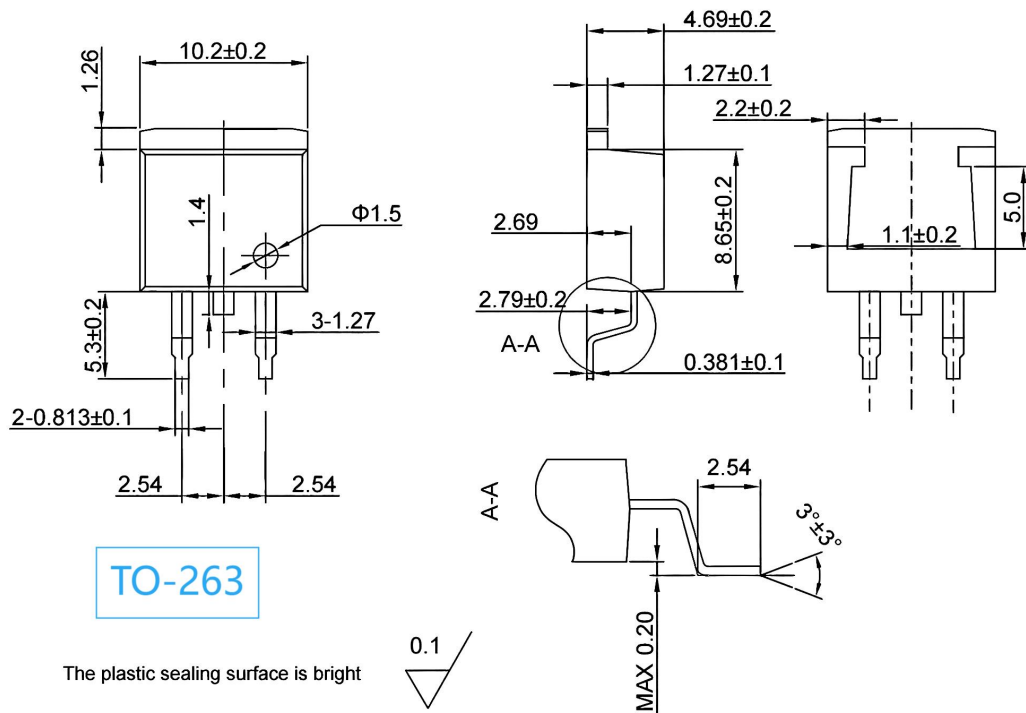


Fig.5 – Typical Junction Capacitance



Package outline dimension





Notes:

1. Unmarked tolerance $\pm 0.15\text{mm}$; unmarked $R < 0.15\text{mm}$
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

