EF2020CTW

List

EF2020CTW

20.0A FRED Rectifiers 200V

Features

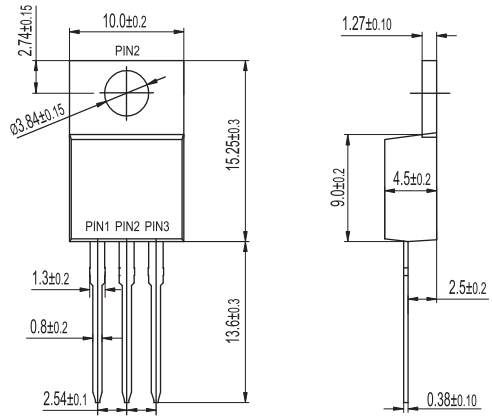
- Planar structure with EPI wafer
- Ultra and soft recovery characteristic.
- Low power loss.
- Low leakage current.
- For PFC (DCM / CCM) operation.
- Lead free in compliance with EU RoHS 2011/65/EU directive.
- Suffix "-H" indicates Halogen free parts, ex. EF2020CTW-H.

Mechanical data

- Circuit figure : Single postive
- Lead : Solderable per MIL-STD 202, Method 208.
- Case : JEDEC TO-220AB molded plastic body over passivated chip.
- Polarity: As marked
- Mounting torque : 5 in-lbs maximum.
- Terminals : Puretin pated.
- Weight : Approximated 1.85 gram

Package outline

TO-220AB



Dimensions in millimeters

Maximum ratings (AT T_A=25°C unless otherwise noted)

PARAMETER		Symbol	EF2020CTW	Unit
Repetitive peak reverse voltage		V_{RRM}	200	Volts
RMS voltage		V_{RMS}	140	Volts
EC blocking voltage		V_{DC}	200	Volts
Average forward rectified current	per device per diode	I_O	20 10	A
Peak forward surge current 8.3ms single half sine-wave		I_{FSM}	200	A
Typical thermal resistance		$R_{\theta JC}$	2.0	°C/W
Operating junction temperature range		T_J	-55 to +150	°C
Storage temperature range		T_{STG}	-55 to +150	°C

Electrical characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER		Symbol	Min.	Typ.	Max.	Unit
Instantaneous forward voltage per diode	I_F = 8A, T_J=25°C I_F = 10A, T_J=25°C I_F = 10A, T_J=125°C	V_F		- 1.05 -	0.98 1.10 1.00	Volts
Reverse current per diode	V_R = 200V, T_J=25 ℃ V_R = 200V, T_J=125 ℃	I_R			5 500	uA
Reverse recovery time	I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A, T_J=25°C	T_{RR}			25	ns

Rating and characteristic curves (EF2020CTW)

Fig.1 FORWARD CURRENT DERATING CURVE

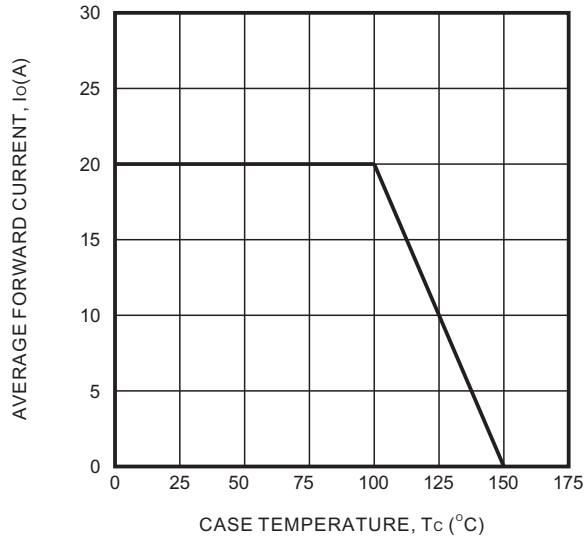


Fig.2 TYPICAL FORWARD CHARACTERISTICS

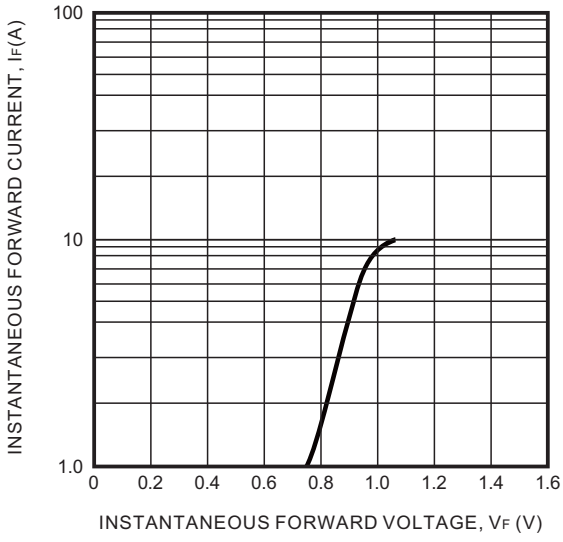


Fig.3 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

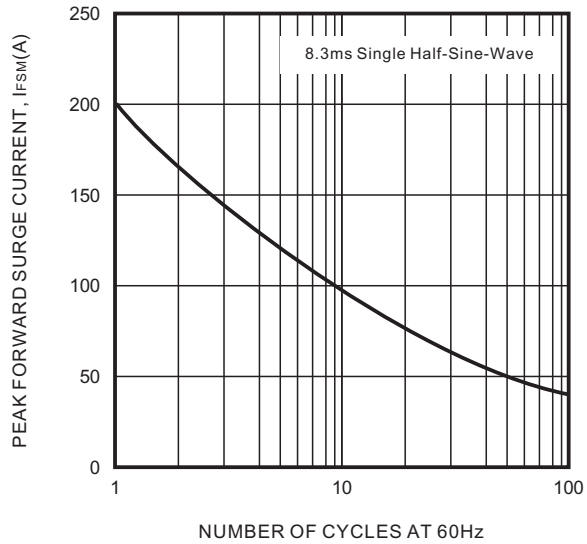
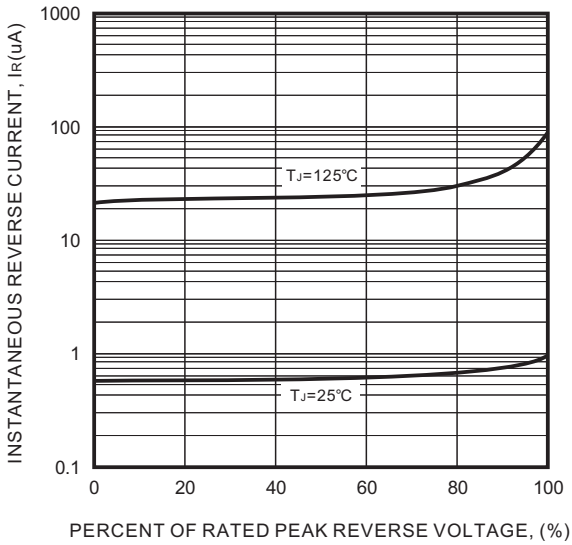
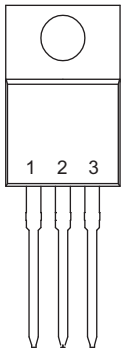
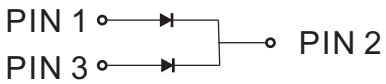


Fig.4 TYPICAL REVERSE CHARACTERISTICS

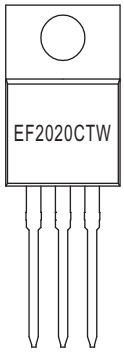


EF2020CTW

Pinning information

Pin	Simplified outline	Symbol
Pin1 anode Pin2 cathode Pin3 anode		

Marking

Type number	Marking code
EF2020CTW	

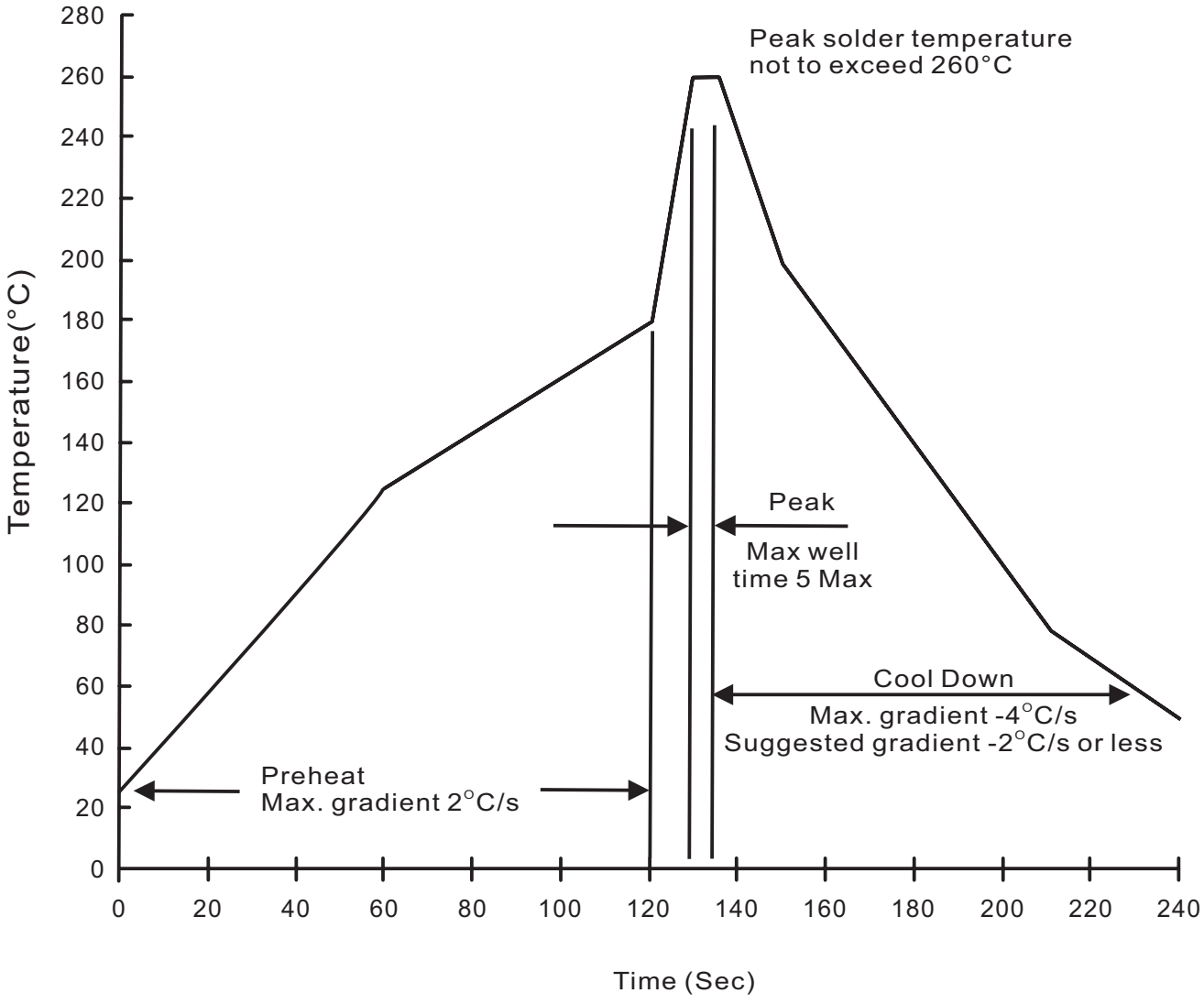
Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
TO-220AB	50	525*31.9*6.4	1000	545*150*45	575*245*170	5,000	15.0

EF2020CTW

Suggested thermal profiles for soldering processes

1.Lead free temperature profile wave-soldering



EF2020CTW

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	V_R=80% rate at T_J=150°C for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at T_A=25°C for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	T_A = 25°C, I_F = I_O On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	15P_{SIG} at T_A=121°C for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	8.3ms single half sine-wave , one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at T_A=85°C, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 150°C for 1000 hrs.	MIL-STD-750D METHOD-1031