10Amp. Trench Schottky Ultra Low RECTIFIER

SKT10100E3

$I_{F(AV)}$	2 x 5A
V_{RRM}	100V
V_F at 125°C	0.58V
Tj	150°C

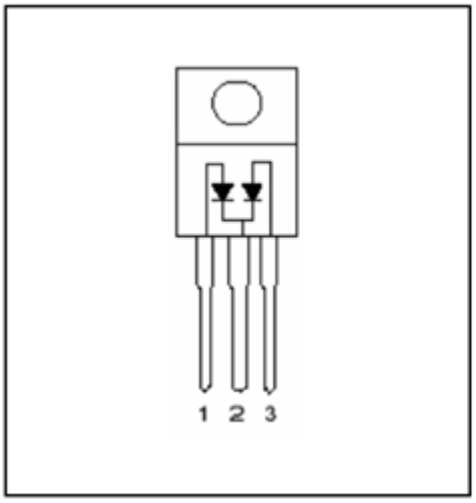
Features

- 150℃ operating junction temperature
- Softest, fast switching capability
- High reverse surge capability
- Reduced ultra-low forward voltage drop (VF) ; better efficiency and cooler operation.
- Lead-Free Finish; RoHS Compliant
- Trench technology provides a superior avalanche capability

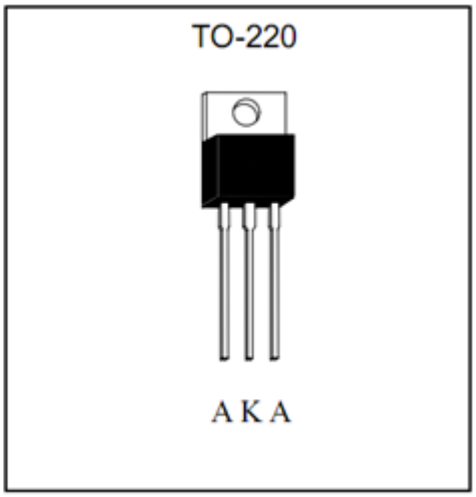
Mechanical Data

- Case: JEDEC TO-220 molded plastic
- Weight: 2.24 grams approximately
- Terminals: Pure tin plated, lead-free, solderable per MIL-STD-750 method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: As marked.
- Mounting Torque: 5 in-lbs max

Equivalent Circuit



Outline



Maximum Ratings and Electrical Characteristics

(Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.)

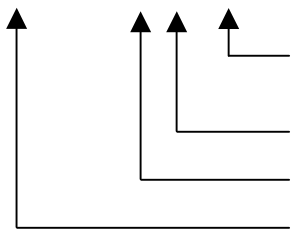
Parameter		Symbol	Min.	Typ.	Max.	Units
Maximum DC blocking voltage		V_{DC}			100	V
Maximum Recurrent peak reverse voltage		V_{RRM}			100	V
Maximum RMS voltage		V_{RMS}			70	V
instantaneous forward voltage at I_F=2A per diode	T_C=25°C	V_F		0.39	-	V
	T_C=125°C			0.35	-	
instantaneous forward voltage at I_F=5A per diode	T_C=25°C	V_F		0.65	0.72	V
	T_C=125°C			0.58	0.66	
Reverse current per diode	V_R=100 V, T_C=25℃	I_R		25	80	μA
	V_R=100 V, T_C=125℃			2	12	mA
Maximum Average forward rectified current per device		$I_{F(AV)}$			10	A
Maximum Average forward rectified current per diode		$I_{F(AV)}$			5	A
Non-repetitive peak forward surge current @ 8.3ms single half sine wave superimposed on rated load (JEDEC method) per diode		I_{FSM}	80			A
Peak Repetitive Reverse Surge Current (2uS-1Khz)		I_{RRM}			2	A
Storage temperature range		Tstg	-55		150	℃
Operating junction temperature range		T_J	-55		150	℃

Thermal Data

Parameter	Symbol	Value	Unit
Typical Thermal Resistance, Junction-to-case	$R_{th,j-c}$	2	°C/W
Typical Thermal Resistance, Junction-to-ambient	$R_{th,j-a}$	60	°C/W

Ordering Information

Device	Package	Shipping
SKT10100E3-0-UB-S	TO-220 (Pb-free lead plating)	50 pcs/tube, 20tubes/box, 4boxes/carton



Environment friendly grade : S for RoHS compliant products, G for RoHS compliant and green compound products

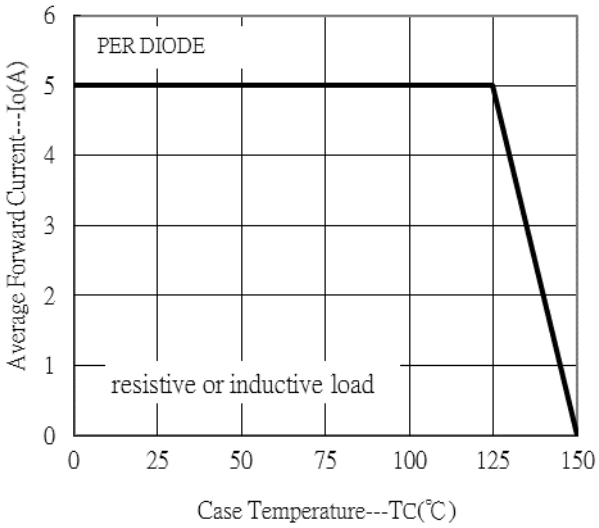
Packing spec, UB : 50 pcs / tube, 20 tubes/box

Product rank, zero for no rank products

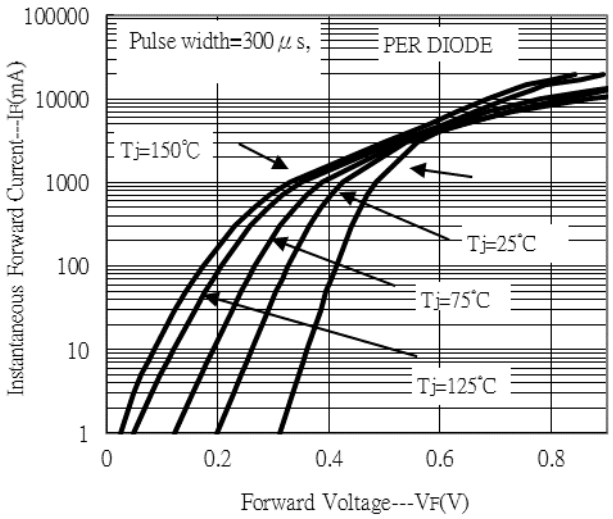
Product name

Typical Characteristics

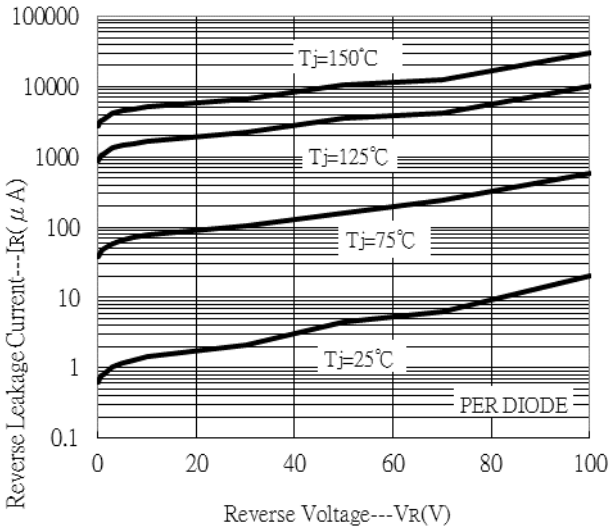
Forward Current Derating Curve



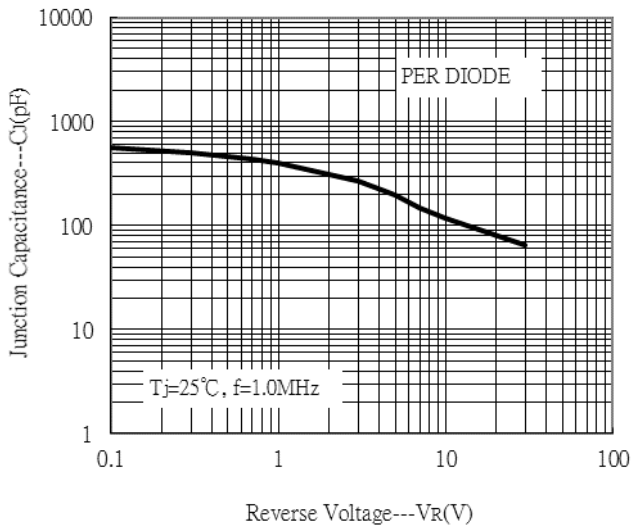
Forward Current vs Forward Voltage



Reverse Leakage Current vs Reverse Voltage



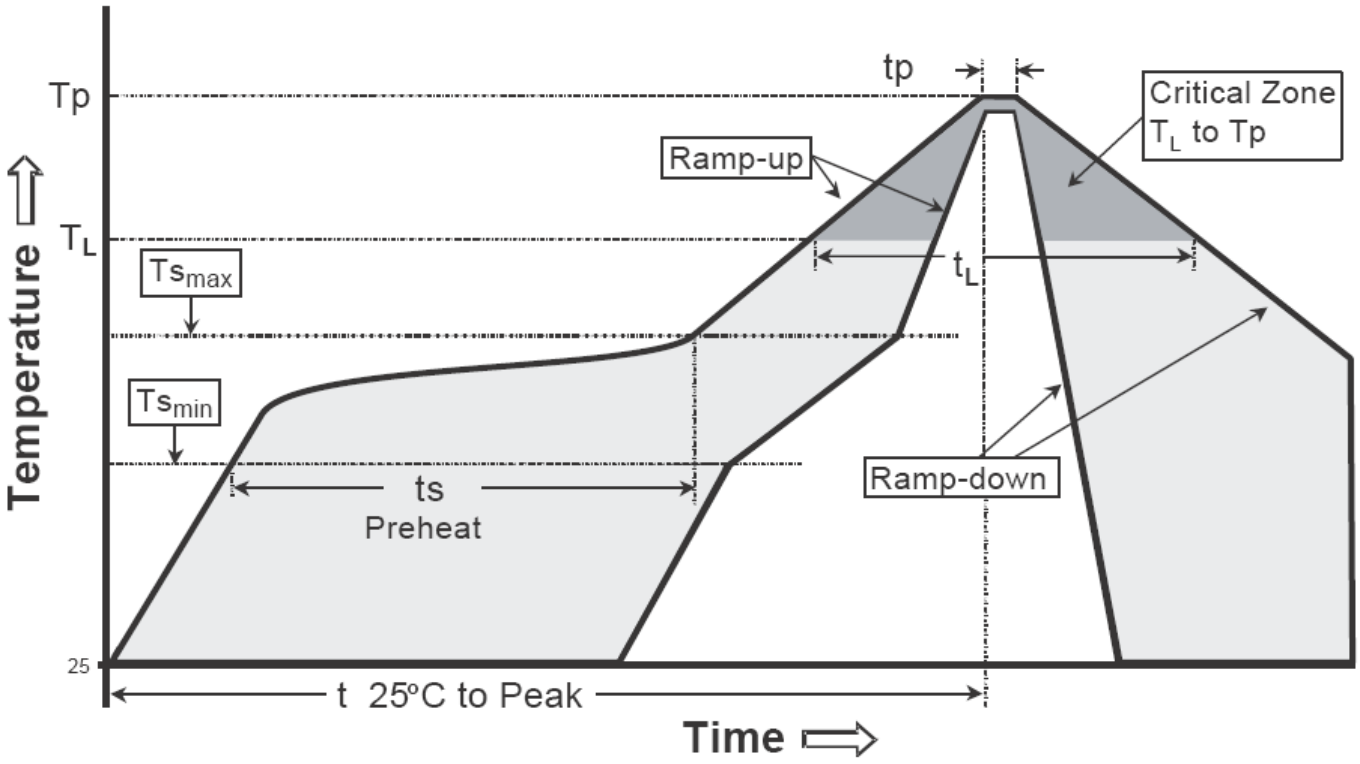
Junction Capacitance vs Reverse Voltage



Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

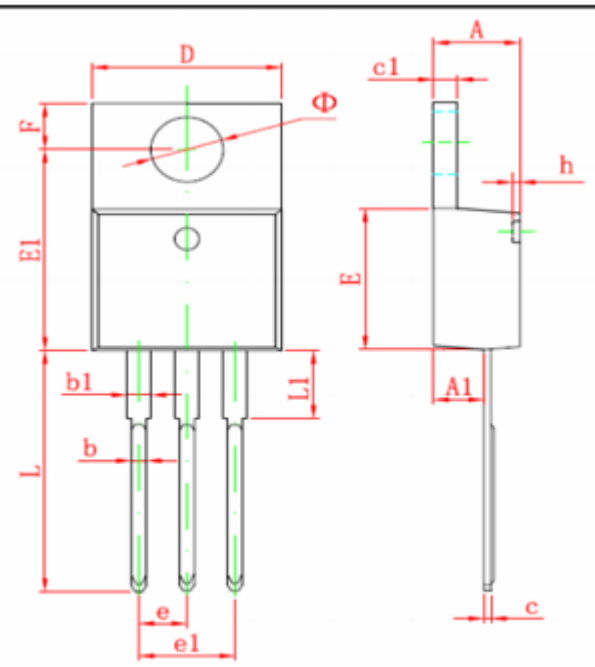
Recommended temperature profile for IR reflow



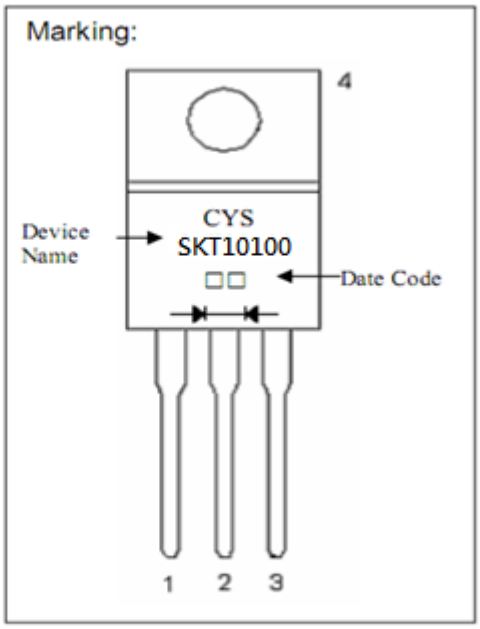
Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(T_S min) −Temperature Max(T_S max) −Time($t_{s\ min}$ to $t_{s\ max}$)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (T_L) − Time (t_L)	 183°C 60-150 seconds	 217°C 60-150 seconds
Peak Temperature(T_P)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

TO-220 Dimension



3-Lead TO-220 Plastic Package
CYStek Package Code: E3



Style: Pin 1.Anode 2.Cathode 3.Anode

*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184	E1	12.060	12.460	0.475	0.491
A1	2.520	2.820	0.099	0.111	e	2.540*		0.100*	
b	0.710	0.910	0.028	0.036	e1	4.980	5.180	0.196	0.204
b1	1.170	1.370	0.046	0.054	F	2.590	2.890	0.102	0.114
c	0.310	0.530	0.012	0.021	h	0.000	0.300	0.000	0.012
c1	1.170	1.370	0.046	0.054	L	13.400	13.800	0.528	0.543
D	10.010	10.310	0.394	0.406	L1	3.560	3.960	0.140	0.156
E	8.500	8.900	0.335	0.350	Φ	3.735	3.935	0.147	0.155

Notes: 1.Controlling dimension: millimeters.
2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.