

**Pb Free Plating Product**

U30D20C/U30D30C/U30D40C/U30D50C/U30D60C



30.0Ampere Heat Sink Dual Common Cathode Ultra Fast Recovery Half Bridge Rectifiers

**Features**

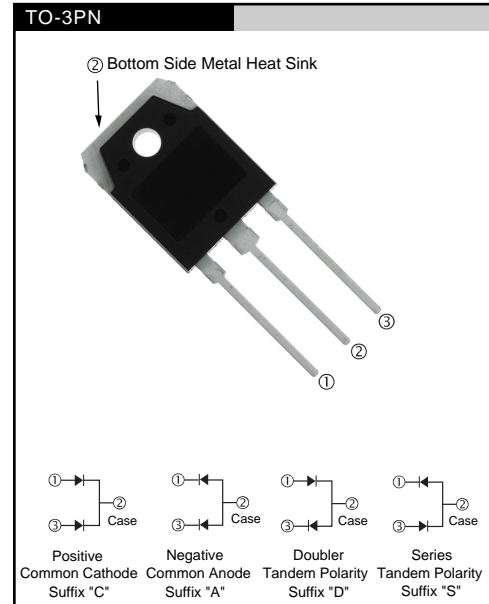
- \* Fast switching for high efficiency
- \* Low forward voltage drop
- \* High current capability
- \* Low reverse leakage current
- \* High surge current capability

**Application**

- \* Automotive Inverters and Solar Inverters
- \* Plating Power Supply, Motor Control, SMPS and UPS
- \* Car Audio Amplifiers and Sound Device Systems

**Mechanical Data**

- \* Case: Heatsink TO-3PN open metal package
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Terminals: Solderable per MIL-STD-202 method 208
- \* Polarity: As marked on diode body
- \* Mounting position: Any
- \* Weight: 0.65 gram approximately



## 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%.

	SYMBOL	U30D20C	U30D30C U30D40C	U30D50C U30D60C	UNIT
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	200	400	600	V
Maximum RMS Voltage	V <sub>RMS</sub>	140	280	420	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	200	400	600	V
Maximum Average Forward Rectified Current T <sub>c</sub> =125°C (Total Device 2x15A=30A)	I <sub>F(AV)</sub>	30.0			A
Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	300			A
Maximum Instantaneous Forward Voltage @ 15.0 A (Per Diode/Per Leg)	V <sub>F</sub>	0.98	1.3	1.7	V
Maximum DC Reverse Current @T <sub>J</sub> =25°C At Rated DC Blocking Voltage @T <sub>J</sub> =125°C	I <sub>R</sub>	10 500			uA uA
Maximum Reverse Recovery Time (Note 1)	T <sub>rr</sub>	35-50			nS
Typical junction Capacitance (Note 2)	C <sub>J</sub>	150			pF
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150			°C

NOTES : (1) Reverse recovery test conditions I<sub>F</sub> = 0.5A I<sub>R</sub> = 1.0A I<sub>rr</sub> = 0.25A.  
 (2) Thermal Resistance junction to terminal.  
 (3) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.

FIG.1 - FORWARD CURRENT DERATING CURVE

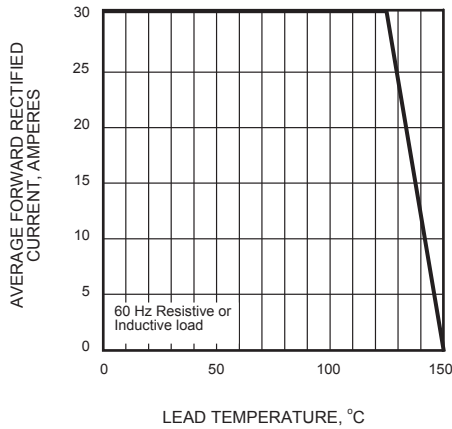


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

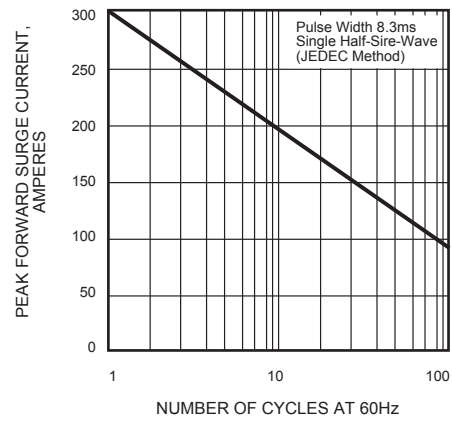


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

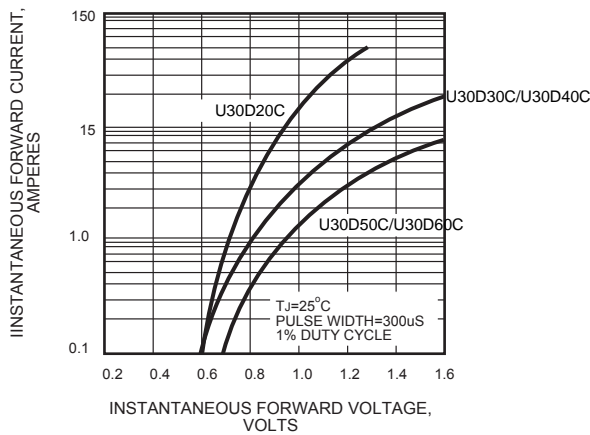


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

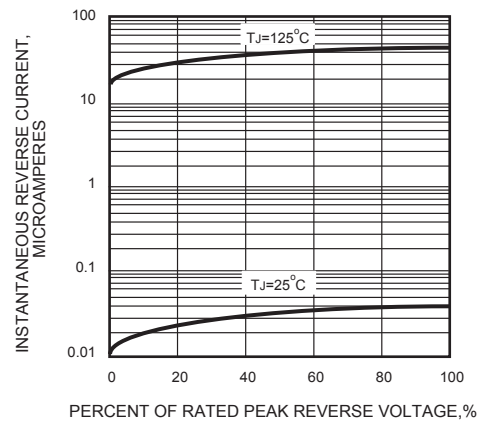
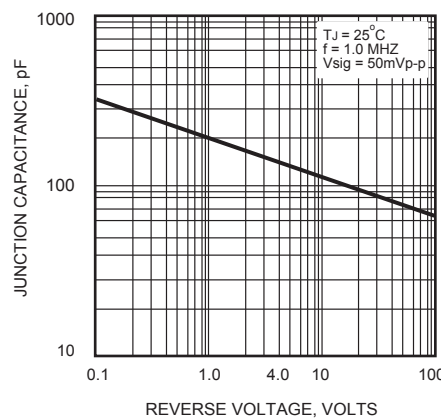
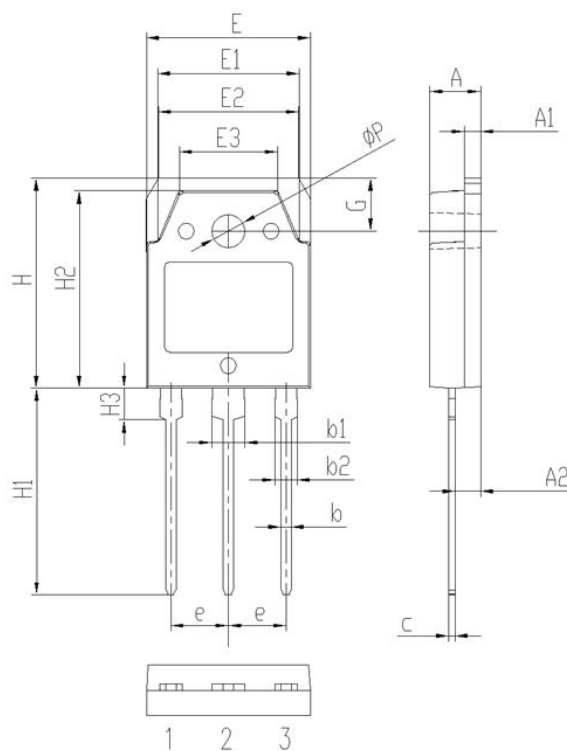


FIG.5 - TYPICAL JUNCTION CAPACITANCE



**Package Information**

TO-3PN Package Outline



Symbol	Dimensions(millimeters)	
	Min.	Max.
A	4.60	5.00
A1	1.50	2.00
A2	2.20	2.60
b	0.80	1.20
b1	2.90	3.30
b2	1.90	2.30
c	0.40	0.80
e	5.25	5.65
E	15.3	15.7
E1	13.2	13.6
E2	13.1	13.5
E3	9.10	9.50
H	19.7	20.1
H1	19.1	20.1
H2	18.3	18.7
H3	2.80	3.20
G	4.80	5.20
ΦP	3.00	3.40