

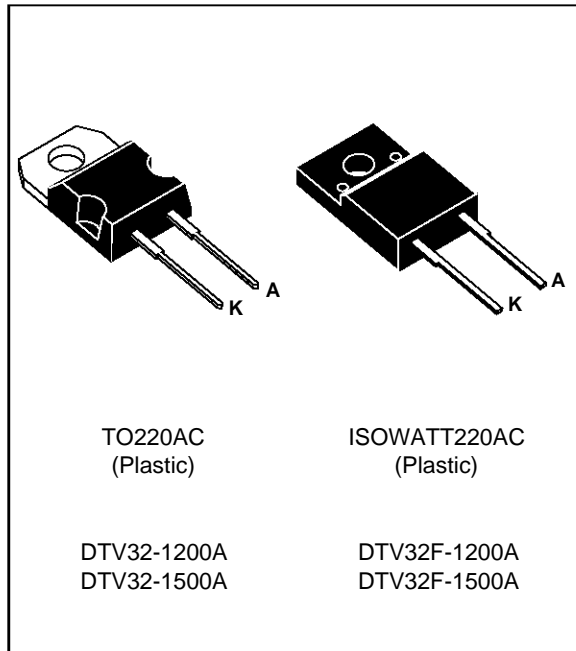
(CRT HORIZONTAL DEFLECTION)  
 HIGH VOLTAGE DAMPER DIODE

**FEATURES**

- HIGH BREAKDOWN VOLTAGE CAPABILITY
- LOW AND MEDIUM FREQUENCY OPERATION
- SPECIFIED TURN ON SWITCHING CHARACTERISTICS
- TYPICAL TOTAL LOSSES : 2 W  
( $I_{Fpeak} = 6\text{ A}$ ,  $F = 32\text{ kHz}$ )
- SUITABLE WITH **BUH** TRANSISTORS SERIES
- INSULATED VERSION (ISOWATT220AC) :  
Insulating voltage = 2000 V DC  
Capacitance = 12 pF

**DESCRIPTION**

High voltage diode especially designed for horizontal deflection stage in standard and high resolution displays for TV's and monitors.  
 This device is packaged in TO220AC or ISOWATT220AC.


**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$I_{F(RMS)}$	RMS forward current	15	A
$I_{F(AV)}$	Average forward current $\delta = 0.5$	TO220AC	A
		$T_c = 130^\circ\text{C}$	
$I_{FSM}$	Surge non repetitive forward current	ISOWATT220AC	A
		$T_c = 115^\circ\text{C}$	
$I_{FSM}$	Surge non repetitive forward current	$t_p = 10\text{ms}$ sinusoidal	A
$T_{stg}$ $T_j$	Storage and junction temperature range	- 40 to + 150 - 40 to + 150	$^\circ\text{C}$ $^\circ\text{C}$

Symbol	Parameter	DTV32(F)-		Unit
		1200A	1500A	
$V_{RRM}$	Repetitive peak reverse voltage	1200	1500	V
$V_{RWM}$	Reverse working voltage	1000	1350	V

## DTV32(F)-1200A / DTV32(F)-1500A

### THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
Rth (j-c)	Junction to case	TO220AC	2	°C/W
		ISOWATT220AC	4	

### ELECTRICAL CHARACTERISTICS

#### STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I <sub>R</sub> *	T <sub>j</sub> = 25°C	V <sub>R</sub> = V <sub>RWM</sub>			100	μA
	T <sub>j</sub> = 100°C				1	mA
V <sub>F</sub> **	T <sub>j</sub> = 25°C	I <sub>F</sub> = 6 A			1.3	V
	T <sub>j</sub> = 100°C	I <sub>F</sub> = 6 A			1.2	

Pulse test : \* t<sub>p</sub> = 5 ms, duty cycle < 2 %

\*\* t<sub>p</sub> = 380 μs, duty cycle < 2 %

#### RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
trr (1)	T <sub>j</sub> = 25°C	I <sub>F</sub> = 1 A V <sub>R</sub> = 30 V		450	600	ns
trr (2)	T <sub>j</sub> = 25°C	I <sub>F</sub> = 1 A V <sub>R</sub> = 30 V		300		ns
trr	T <sub>j</sub> = 25°C	I <sub>F</sub> = 100mA I <sub>R</sub> = 100mA		250		ns

#### TURN ON SWITCHING CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t <sub>FR</sub> (2)	T <sub>j</sub> = 100°C	I <sub>F</sub> = 6 A dI <sub>F</sub> /dt = 80 A/μs		0.5		μs
V <sub>FP</sub> (2)		V <sub>FR</sub> = 2 V		30		V

(1) Test following Jedec Standard

(2) Test representative of the application

To evaluate the conduction losses use the following equations :

$$V_F = 1.0 + 0.025 I_F \quad P = 1.0 \times I_{F(AV)} + 0.025 \times I_{F(RMS)}^2$$

Fig.1 : Average forward power dissipation versus average forward current.

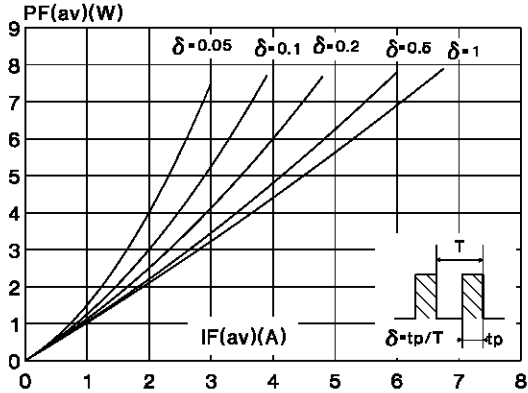


Fig.2 : Peak current versus form factor.

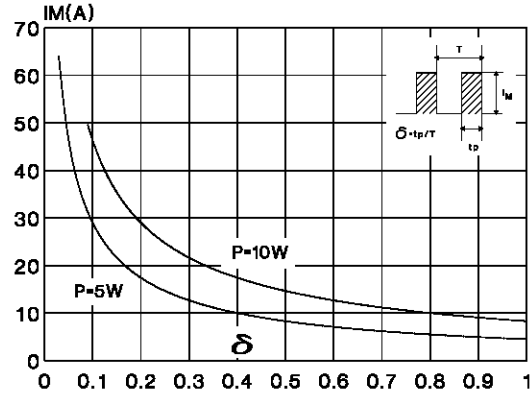


Fig.3 : Average current versus ambient temperature. (duty cycle : 0.5) (TO220AC)

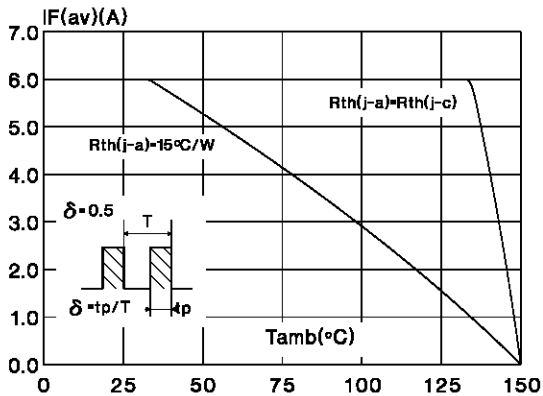


Fig.4 : Average current versus ambient temperature. (duty cycle : 0.5) (ISOWATT220AC)

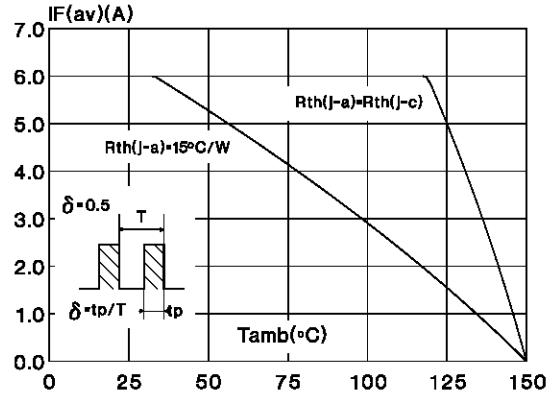


Fig.5 : Non repetitive surge peak forward current versus overload duration. (Maximum values) (TO220AC)

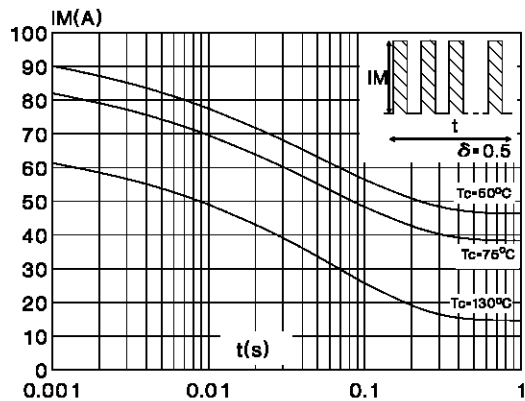
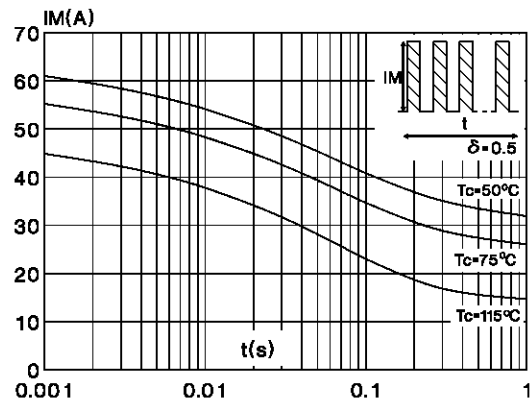
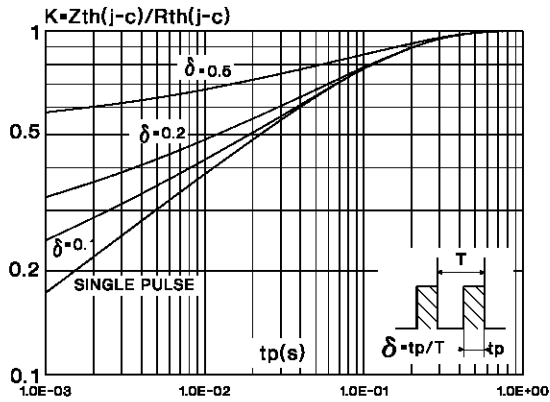


Fig.6 : Non repetitive surge peak forward current versus overload duration. (Maximum values) (ISOWATT220AC)

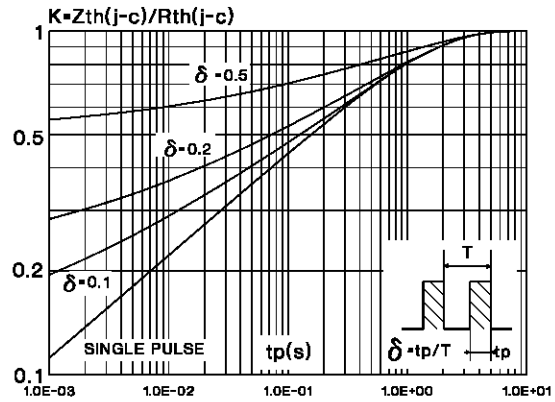


**DTV32(F)-1200A / DTV32(F)-1500A**

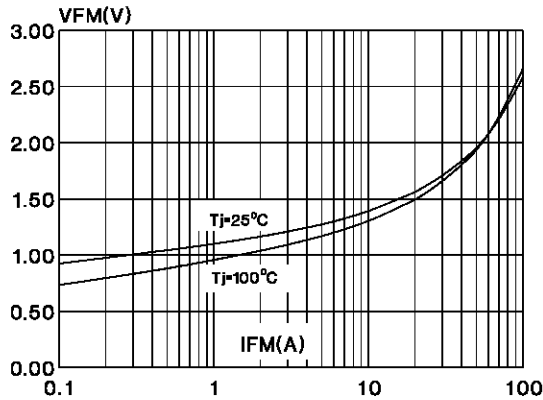
**Fig.7 :** Relative variation of thermal transient impedance junction to case versus pulse duration. (TO220AC)



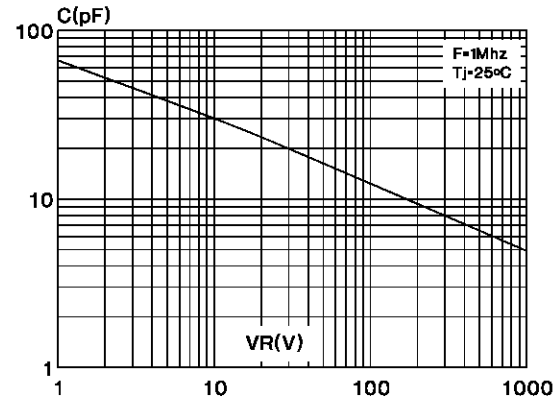
**Fig.8 :** Relative variation of thermal transient impedance junction to case versus pulse duration. (ISOWATT220AC)



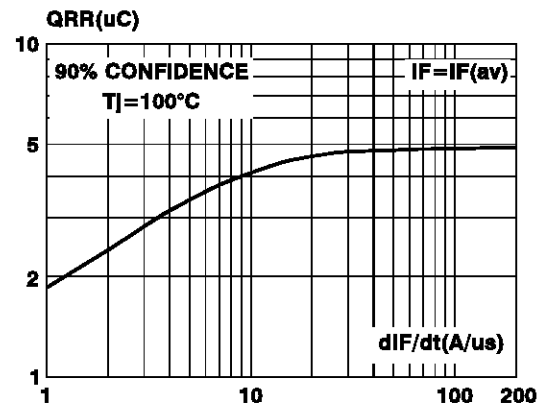
**Fig.9 :** Forward voltage drop versus forward current. (Maximum values)



**Fig.10 :** Junction capacitance versus reverse voltage applied. (Typical values)



**Fig.11 :** Recovery charge versus dIF/dt.



**Fig.12 :** Peak reverse current versus dIF/dt.

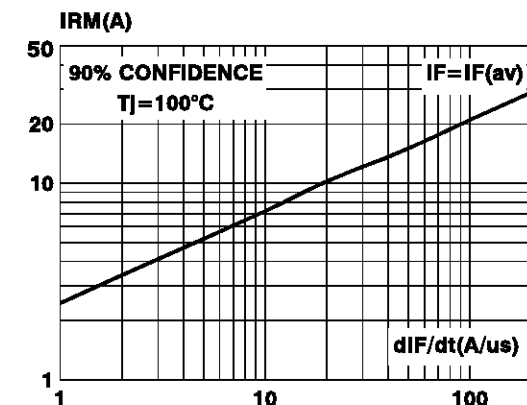


Fig.13 : Dynamic parameters versus junction temperature.

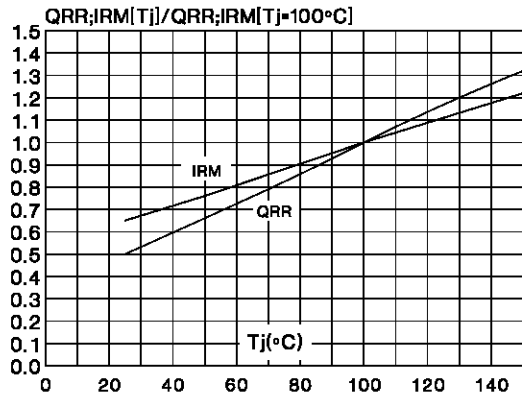


Fig.14 : Peak forward voltage versus  $dI_F/dt$ .

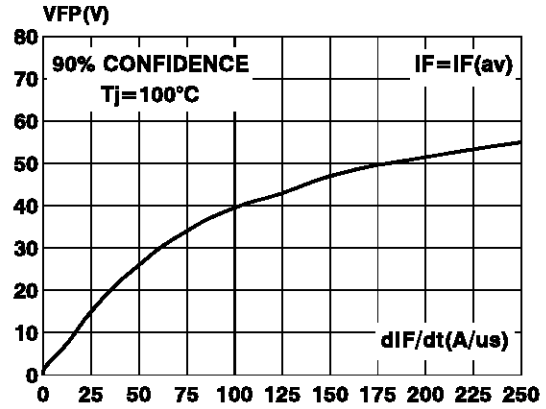
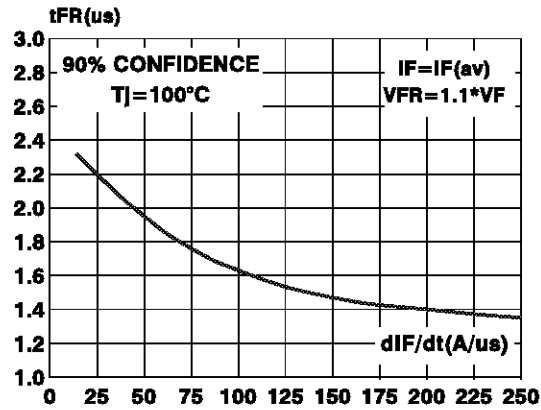
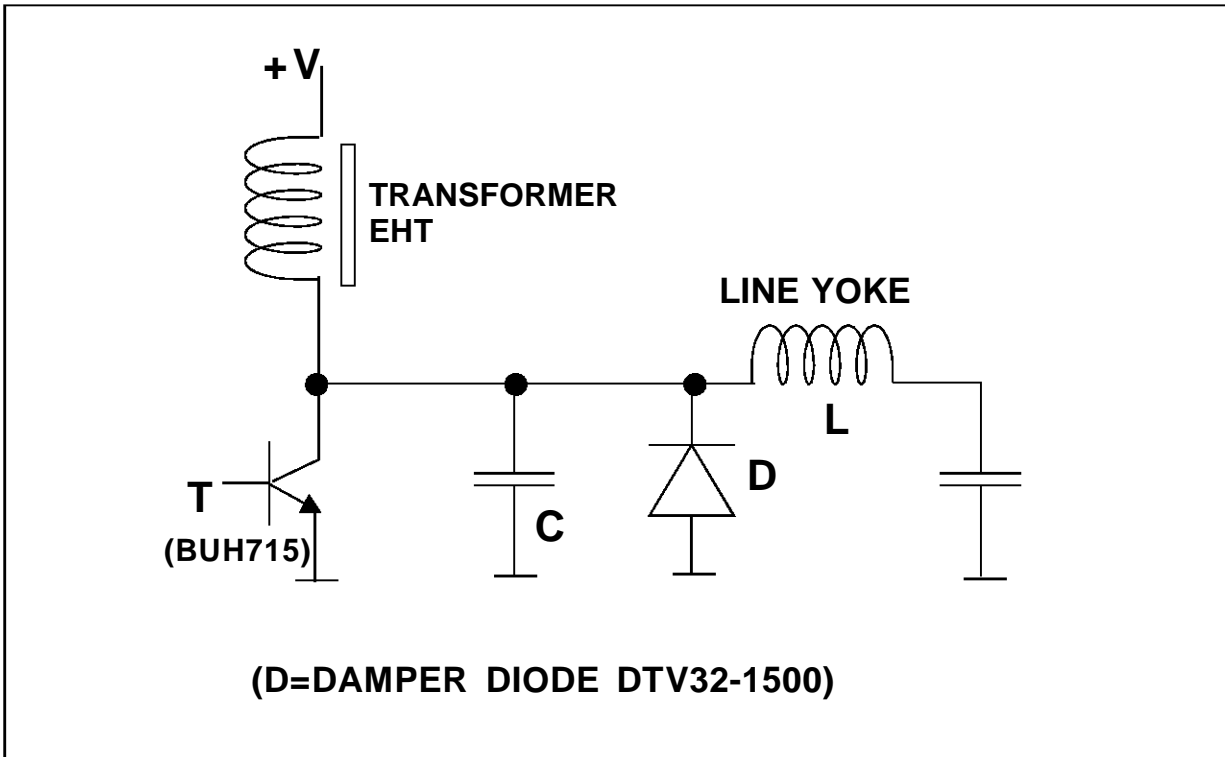


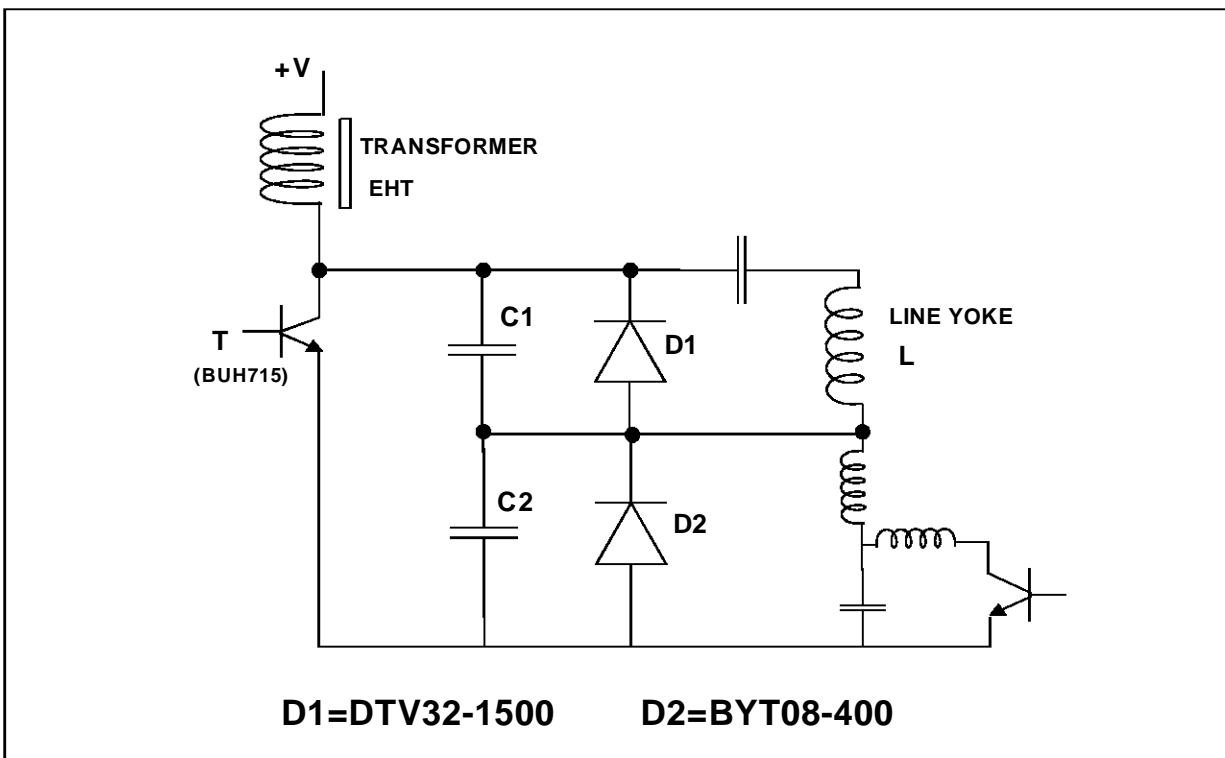
Fig.15 : Recovery time versus  $dI_F/dt$ .



BASIC HORIZONTAL DEFLECTION CIRCUIT

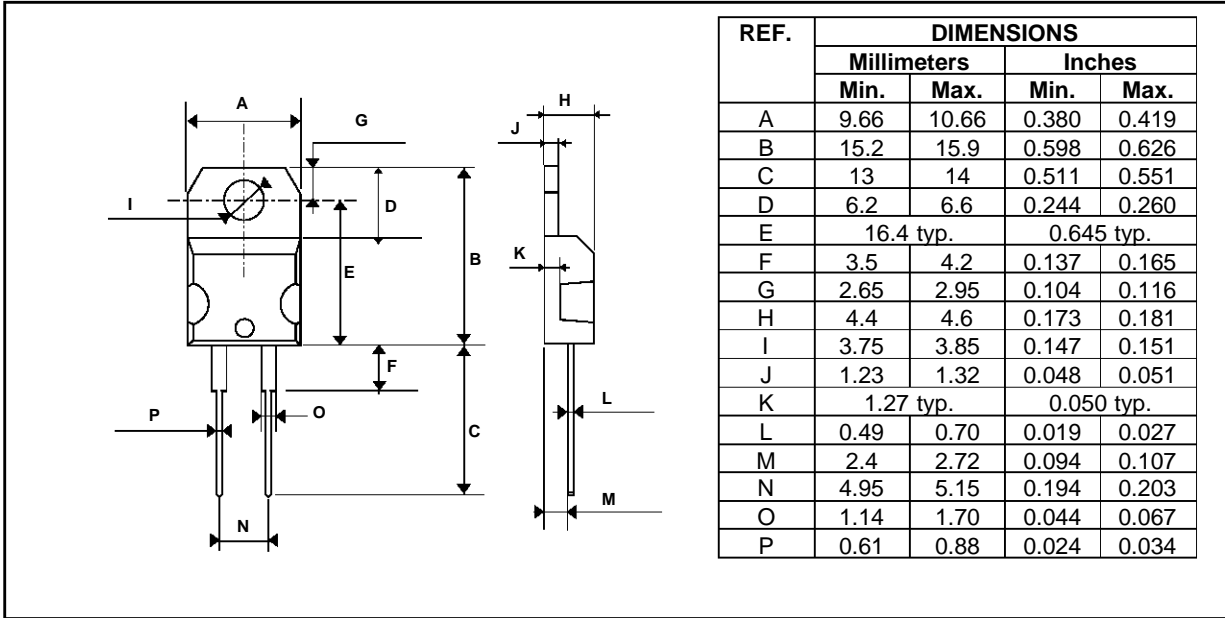


BASIC E-W DIODE MODULATOR CIRCUIT



**PACKAGE MECHANICAL DATA**

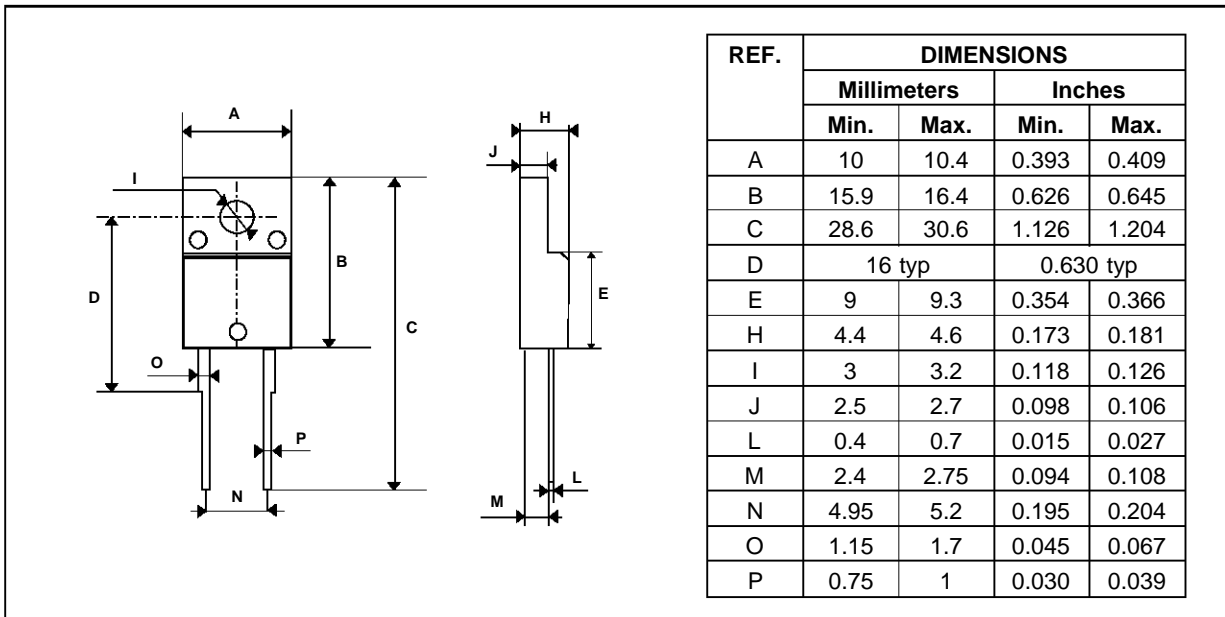
TO220AC Plastic



Cooling method : C  
 Marking : Type number  
 Weight : 1.9 g  
 Recommended torque value : 0.55m.N  
 Maximum torque value : 0.70m.N

**PACKAGE MECHANICAL DATA**

ISOWATT220AC Plastic



Cooling method : C  
 Marking : Type number  
 Weight : 2 g  
 Recommended torque value : 0.55m.N  
 Maximum torque value : 0.70m.N

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