



# P0130AA

SENSITIVE

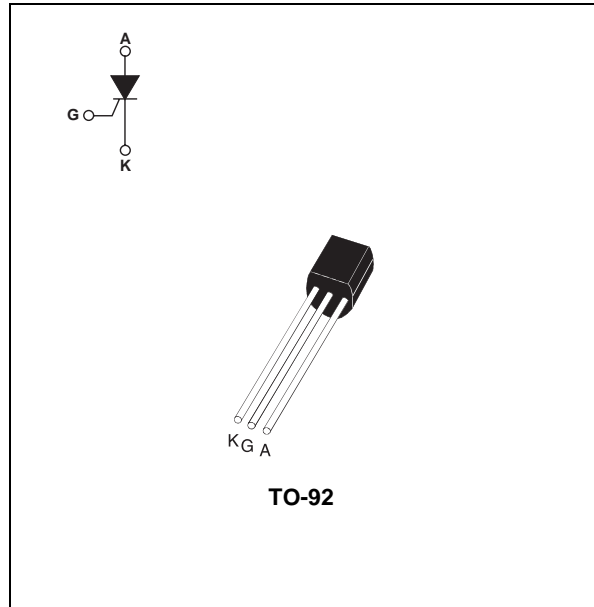
0.8A SCRs

## MAIN FEATURES:

Symbol	Value	Unit
$I_{T(RMS)}$	0.8	A
$V_{DRM}/V_{RRM}$	100	V
$I_{GT}$	1	$\mu A$

## DESCRIPTION

The P0130AA is a gate sensitive SCR, packaged in TO-92, used in conjunction of a TN22 A.S.D™ and of a resistor in electronic starter for fluorescent tubelamps.



## ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit	
$I_{T(RMS)}$	RMS on-state current (180° conduction angle)		$T_I = 55^\circ C$ 0.8	A	
$I_{T(AV)}$	Average on-state current (180° conduction angle)		$T_I = 55^\circ C$ 0.5	A	
$I_{TSM}$	Non repetitive surge peak on-state current	$t_p = 8.3 \text{ ms}$	$T_j = 25^\circ C$	8	
		$t_p = 10 \text{ ms}$		7	
$I^2t$	$I^2t$ Value for fusing	$t_p = 10 \text{ ms}$	$T_j = 25^\circ C$	0.24	$A^2s$
$di/dt$	Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$ , $t_r \leq 100 \text{ ns}$	$F = 60 \text{ Hz}$	$T_j = 125^\circ C$	50	$A/\mu s$
$I_{GM}$	Peak gate current	$t_p = 20 \mu s$	$T_j = 125^\circ C$	1	A
$P_{G(AV)}$	Average gate power dissipation		$T_j = 125^\circ C$	0.1	W
$T_{stg}$ $T_j$	Storage junction temperature range Operating junction temperature range			- 40 to + 150 - 40 to + 125	$^\circ C$

**P0130AA****ELECTRICAL CHARACTERISTICS** ( $T_j = 25^\circ\text{C}$ , unless otherwise specified)

Symbol	Test Conditions			P0130AA	Unit		
$I_{GT}$	$V_D = 12\text{ V}$	$R_L = 140\ \Omega$	MIN.	0.1	$\mu\text{A}$		
			MAX.	1			
$V_{GT}$			MAX.	0.8	V		
$V_{GD}$	$V_D = V_{DRM}$	$R_L = 3.3\ \text{k}\Omega$	$R_{GK} = 1\ \text{k}\Omega$	$T_j = 125^\circ\text{C}$	MIN.	0.1	V
$V_{RG}$	$I_{RG} = 10\ \mu\text{A}$				MIN.	8	V
$I_H$	$I_T = 50\ \text{mA}$		$R_{GK} = 1\ \text{k}\Omega$		MAX.	5	mA
$I_L$	$I_G = 1\ \text{mA}$		$R_{GK} = 1\ \text{k}\Omega$		MAX.	6	mA
dV/dt	$V_D = 67\% V_{DRM}$		$R_{GK} = 1\ \text{k}\Omega$	$T_j = 125^\circ\text{C}$	MIN.	25	V/ $\mu\text{s}$
$V_{TM}$	$I_{TM} = 1.6\ \text{A}$		$t_p = 380\ \mu\text{s}$	$T_j = 25^\circ\text{C}$	MAX.	1.95	V
$V_{t0}$	Threshold voltage			$T_j = 125^\circ\text{C}$	MAX.	0.95	V
$R_d$	Dynamic resistance			$T_j = 125^\circ\text{C}$	MAX.	600	m $\Omega$
$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM}$		$R_{GK} = 1\ \text{k}\Omega$	$T_j = 25^\circ\text{C}$	MAX.	1	$\mu\text{A}$
				$T_j = 125^\circ\text{C}$	MAX.	100	

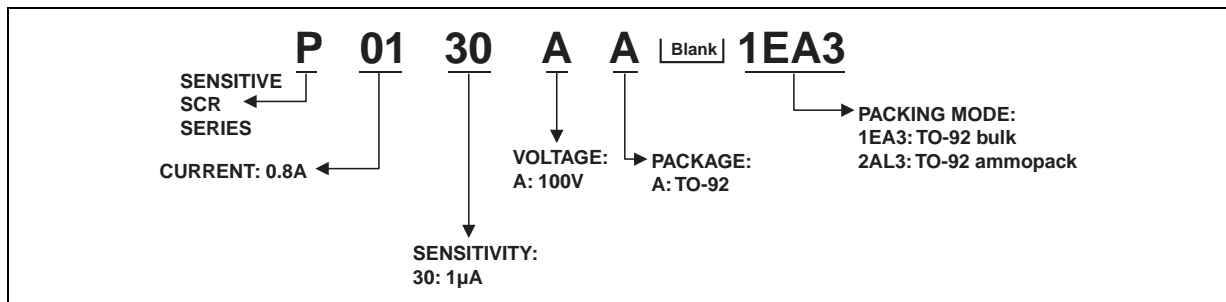
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-i)}$	Junction to case (DC)	80	$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	Junction to ambient (DC)	150	$^\circ\text{C}/\text{W}$

**PRODUCT SELECTOR**

Part Number	Voltage	Sensitivity	Package
P0130AA	100V	1 $\mu\text{A}$	TO-92

**ORDERING INFORMATION**

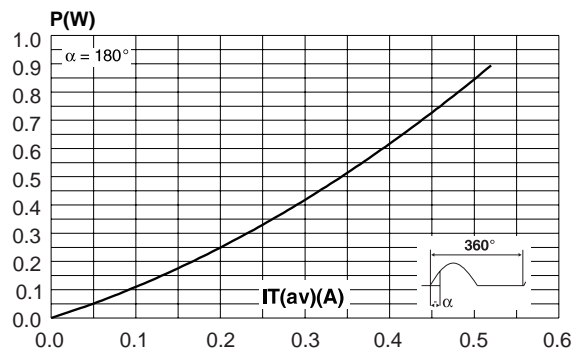


**OTHER INFORMATION**

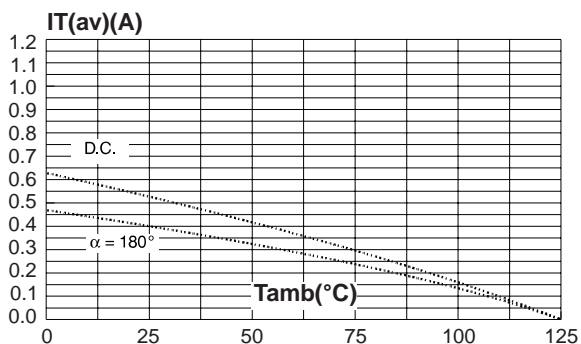
Part Number	Marking	Weight	Base Quantity	Packing mode
P0130AA 1EA3	P0130AA	0.2 g	2500	Bulk
P0130AA 2AL3	P0130AA	0.2 g	2000	Ammopack

Note: xx = sensitivity, y = voltage

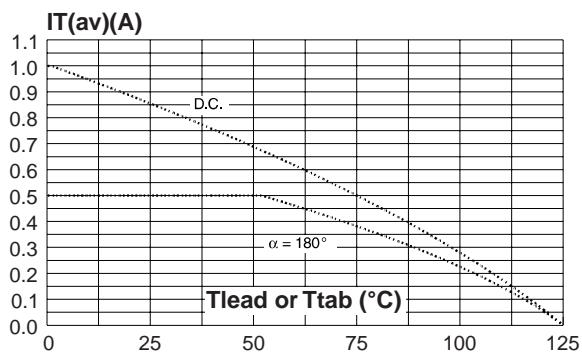
**Fig. 1:** Maximum average power dissipation versus average on-state current.



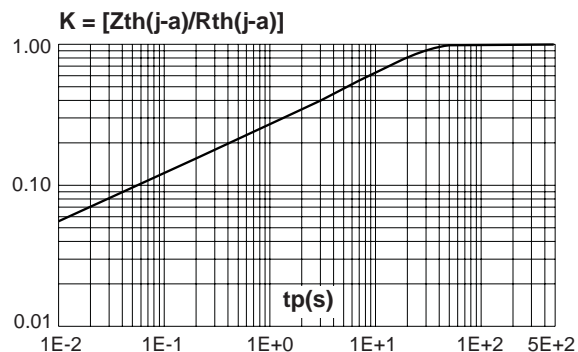
**Fig. 2-2:** Average and D.C. on-state current versus ambient temperature.



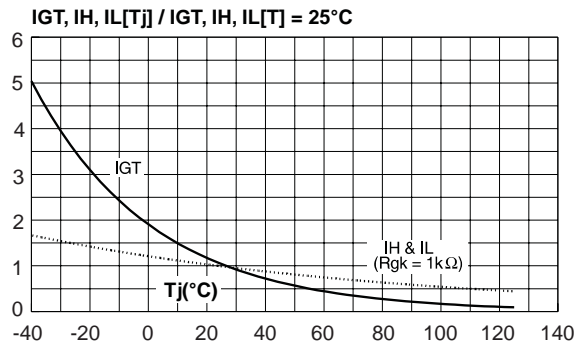
**Fig. 2-1:** Average and D.C. on-state current versus lead temperature.



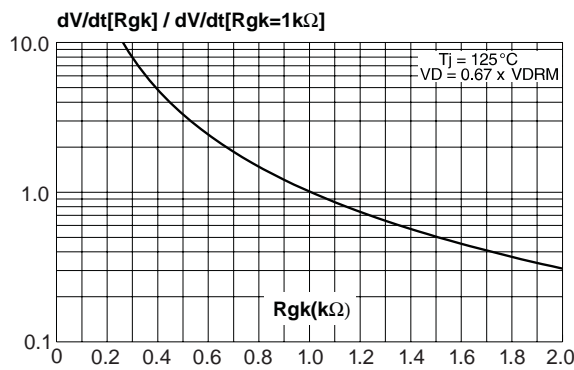
**Fig. 3:** Relative variation of thermal impedance junction to ambient versus pulse duration.



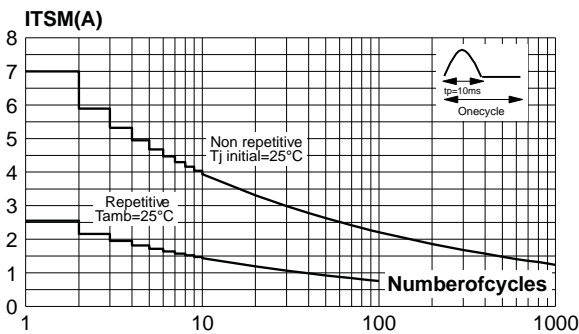
**Fig. 4:** Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).



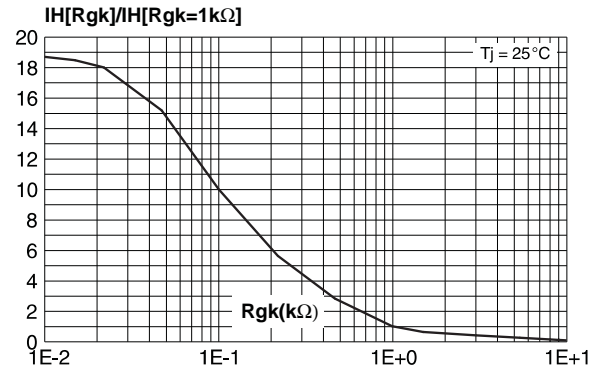
**Fig. 6:** Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).



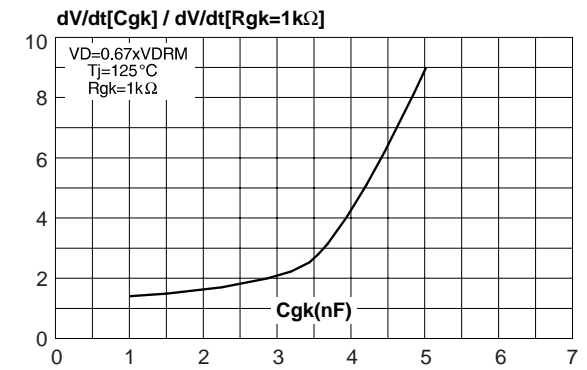
**Fig. 8:** Surge peak on-state current versus number of cycles.



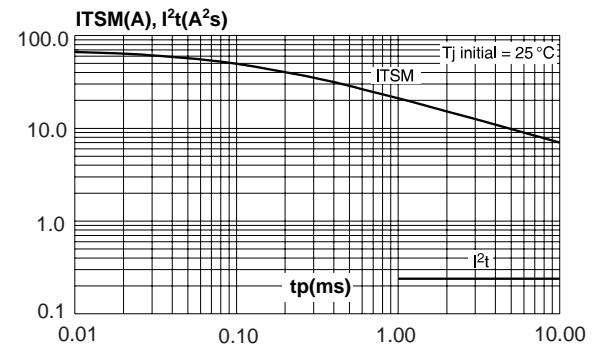
**Fig. 5:** Relative variation of holding current versus gate-cathode resistance (typical values).



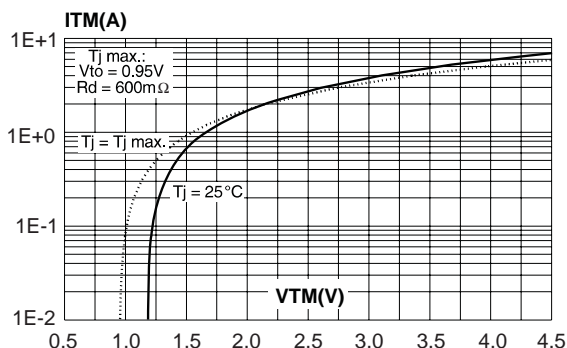
**Fig. 7:** Relative variation of dV/dt immunity versus gate-cathode capacitance (typical values).



**Fig. 9:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10$  ms, and corresponding value of  $I^2t$ .

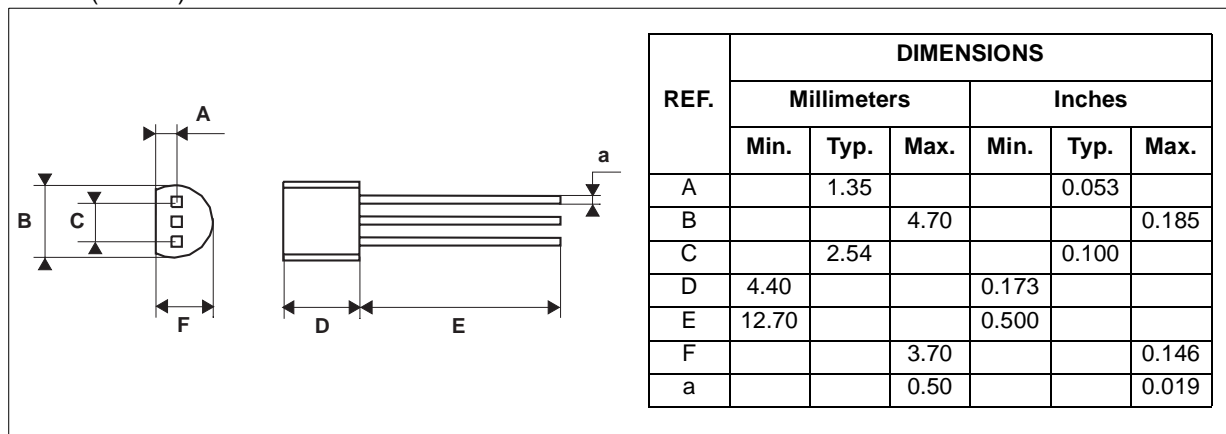


**Fig. 10:** On-state characteristics (maximum values).



**PACKAGE MECHANICAL DATA**

TO-92 (Plastic)



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