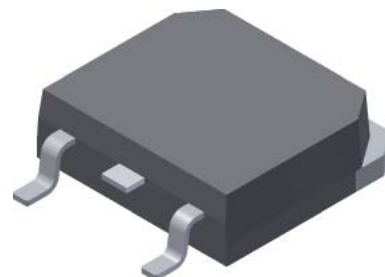


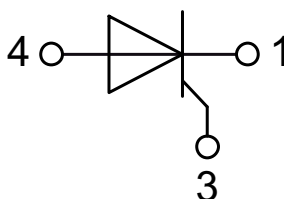
High Voltage Phase Control Thyristor

$$V_{\text{DRM}} = 2500 \text{ V}$$

$$I_{\text{TSM}} = 200 \text{ A}$$



Backside = anode



Features / Advantages:

- high voltage thyristor
 - for line frequency
 - chip technology for long term stability
 - planar glass passivated

Applications:

- controlled rectifiers
 - power supplies
 - drives
- AC switches
- capacitor discharge control
 - flash tubes
 - X-ray and laser generators

Package: TO-268AA (D³Pak)

- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

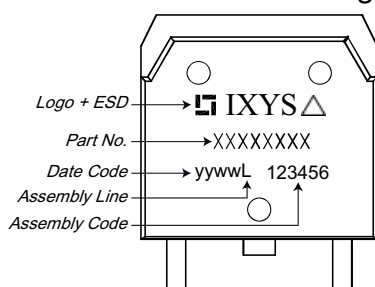
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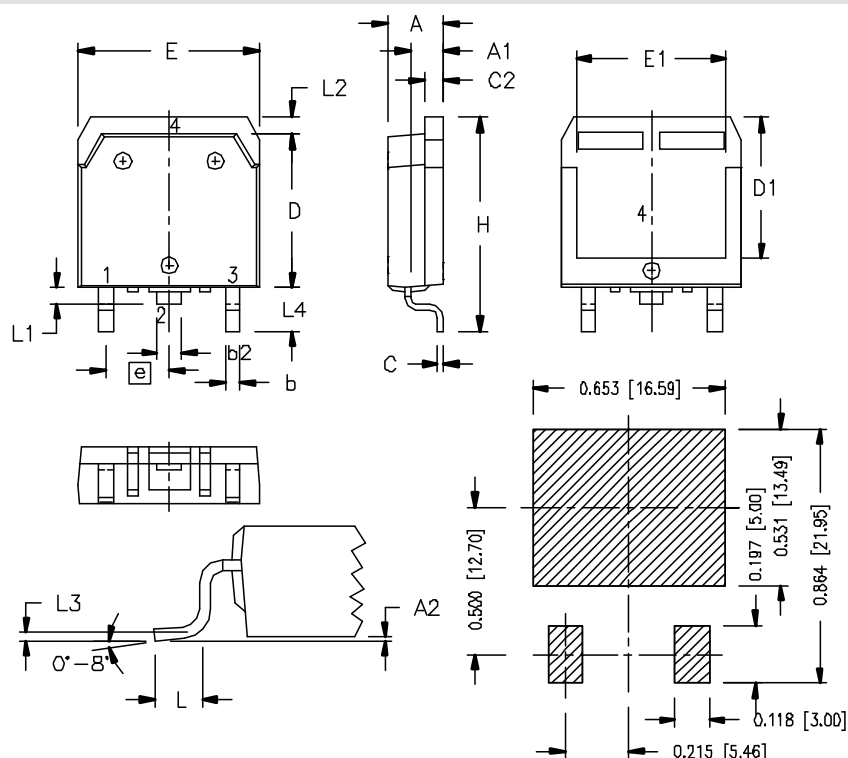
Rectifier			Ratings			
Symbol	Definitions	Conditions	min.	typ.	max.	Unit
$V_{\text{DRM/DSM}}$	max. repetitive/non-repetitive forward blocking voltage				2500	V
$V_{\text{RRM/RSM}}$	max. repetitive/non-repetitive reverse blocking voltage				1650	V
$I_{\text{RRM/DRM}}$	max. repetitive off-state current	$V_{\text{R}} = V_{\text{RRM}}$ $V_{\text{D}} = V_{\text{DRM}}$	$T_{\text{VJ}} = 25^{\circ}\text{C}$ $T_{\text{VJ}} = 70^{\circ}\text{C}$		50 200	μA μA
$I_{\text{DSM/RSM}}$	max. non-repetitive off-state current	$V_{\text{R}} = V_{\text{RSM}}; V_{\text{D}} = V_{\text{DSM}}$	$T_{\text{VJ}} = 70^{\circ}\text{C}$		2	mA
I_{TSM}	max. forward surge current	$t = 10 \text{ ms, sine}; V_{\text{R}} = 0 \text{ V}$	$T_{\text{VJ}} = 25^{\circ}\text{C}$		200	A
$(di/dt)_{\text{cr}}$	critical rate of rise of current	$f = 50 \text{ Hz}; t_{\text{p}} = 200 \mu\text{s}; V_{\text{D}} = 2000 \text{ V}$ $di_{\text{G}}/dt = 0.45 \text{ A}/\mu\text{s}; I_{\text{G}} = 0.45 \text{ A}$ non repetitive; $I_{\text{T}} = 45 \text{ A}$			150	A/ μs
$(dv/dt)_{\text{cr}}$	critical rate of rise of voltage	$V_{\text{D}} = 2200 \text{ V}$ $R_{\text{GK}} = \infty$; method 1 (linear voltage rise)			5000	V/ μs
V_{T}	forward voltage drop	$I_{\text{T}} = 45 \text{ A}$	$T_{\text{VJ}} = 25^{\circ}\text{C}$		3.0	V
V_{GT} I_{GT}	gate trigger voltage gate trigger current	$V_{\text{D}} = 6 \text{ V}$	$T_{\text{VJ}} = 25^{\circ}\text{C}$		2.5 250	V mA
V_{GD} I_{GD}	gate non-trigger voltage gate non-trigger current	$V_{\text{D}} = 2/3 V_{\text{DRM}}$	$T_{\text{VJ}} = 25^{\circ}\text{C}$		0.2 5	V mA
I_{L}	latching current	$t_{\text{p}} = 10 \mu\text{s}; V_{\text{D}} = 6 \text{ V}$ $I_{\text{G}} = 0.45 \text{ A}; di_{\text{G}}/dt = 0.45 \text{ A}/\mu\text{s}$	$T_{\text{VJ}} = 0^{\circ}\text{C}$		700	mA
I_{H}	holding current	$V_{\text{D}} = 6 \text{ V}; R_{\text{GK}} = \infty$	$T_{\text{VJ}} = 0^{\circ}\text{C}$ $T_{\text{VJ}} = 70^{\circ}\text{C}$	55	300	mA mA
t_{q}	turn-off time	$V_{\text{R}} = 10 \text{ V}; I_{\text{T}} = 20 \text{ A}; V_{\text{D}} = 800 \text{ V}$ $di/dt = -20 \text{ A}/\mu\text{s}; dv/dt = 20 \text{ V}/\mu\text{s}$ $t_{\text{p}} = 300 \mu\text{s}$	$T_{\text{VJ}} = 70^{\circ}\text{C}$		100	μs
R_{thJC}	thermal resistance junction to case				0.8	K/W
R_{thCH}	thermal resistance case to heatsink			0.15		K/W

Package TO-268AA (D³Pak)

Symbol	Definitions	Conditions	Ratings			
			min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal			70	A
T_{VJ}	virtual junction temperature		-10		70	°C
T_{op}	operation temperature		-10		70	°C
T_{stg}	storage temperature		-40		70	°C
Weight				4		g
F_c	mounting force with clip		20		120	N
$d_{Spp/App}$	creepage distance on surface / striking distance through air	terminal to terminal	9.4			mm
$d_{Spb/Appb}$		terminal to backside	5.6			mm

Product Marking


Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Ordering Code
Standard	CS20-25moT1-TUB	CS20-25moT1	Tube	30	CS20-25moT1-TUB

Outlines TO-268AA (D³Pak)


RECOMMENDED MINIMUM FOOT PRINT FOR SMD

Dim.	Millimeter		Inches	
	min	max	min	max
A	4.90	5.10	0.193	0.201
A1	2.70	2.90	0.106	0.114
A2	0.02	0.25	0.001	0.100
b	1.15	1.45	0.045	0.057
b2	1.90	2.10	0.075	0.083
C	0.40	0.65	0.016	0.026
C2	1.45	1.60	0.057	0.063
D	13.80	14.00	0.543	0.551
D1	12.40	12.70	0.488	0.500
E	15.85	16.05	0.624	0.632
E1	13.30	13.60	0.524	0.535
e	5.45 BSC		0.215 BSC	
H	18.70	19.10	0.736	0.752
L	2.40	2.70	0.094	0.106
L1	1.20	1.40	0.047	0.055
L2	1.00	1.15	0.039	0.045
L3	0.25 BSC		0.100 BSC	
L4	3.80	4.10	0.150	0.161