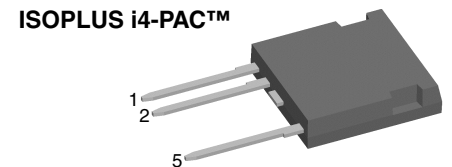
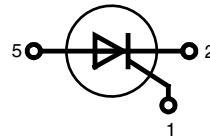


High Voltage Phase Control Thyristor

in High Voltage
ISOPLUS i4-PAC™

$$V_{\text{DRM}} = 2200 \text{ V}$$

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



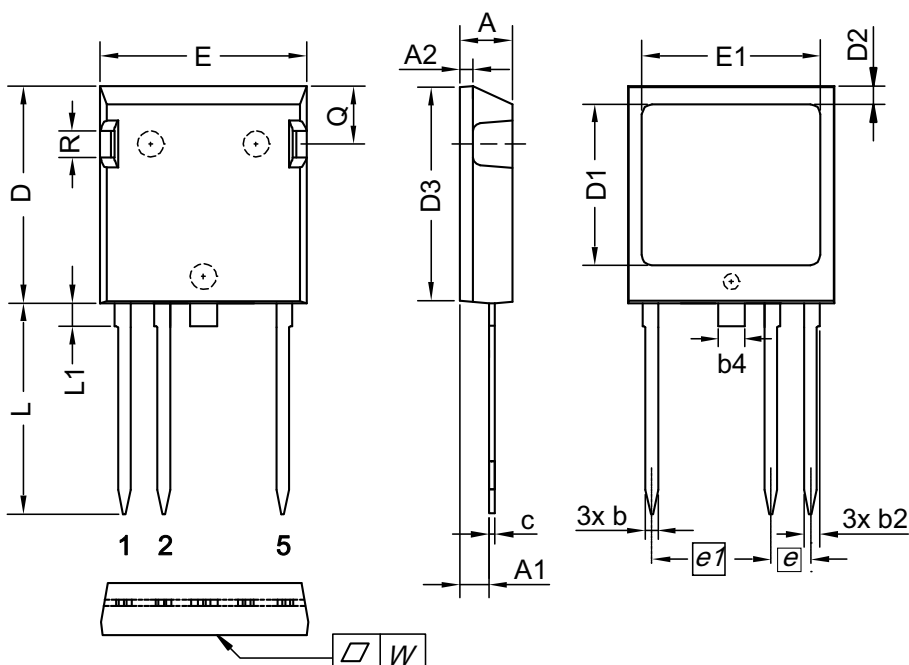
Thyristor			
Symbol	Conditions	Maximum Ratings	
V_{DRM}		2200 V	
V_{DSM}		2300 V	
$V_{\text{RRM}} / \text{RSM}$		1650 V	
I_{TSM}	sine 180°; $t = 10 \text{ ms}$; $V_{\text{R}} = 0 \text{ V}$; $T_{\text{VJ}} = 25^\circ\text{C}$	200 A	
$(di/dt)_{\text{cr}}$	$f = 50 \text{ Hz}$; $t_{\text{p}} = 200 \mu\text{s}$; $V_{\text{D}} = 2000 \text{ V}$ $di_{\text{G}}/dt = 0.45 \text{ A}/\mu\text{s}$; $I_{\text{G}} = 0.45 \text{ A}$ non repetitive; $I_{\text{T}} = 45 \text{ A}$	150 A/ μs	
$(dv/dt)_{\text{cr}}$	$V_{\text{D}} = 2200 \text{ V}$ $R_{\text{GK}} = \infty$; method 1 (linear voltage rise)	5000 V/ μs	
Characteristic Values			
Symbol	Conditions	min.	max.
V_{T}	$I_{\text{T}} = 45 \text{ A}$ $T_{\text{VJ}} = 25^\circ\text{C}$		3.0 V
V_{GT} I_{GT}	$V_{\text{D}} = 6 \text{ V}$ $T_{\text{VJ}} = 25^\circ\text{C}$		2.5 V 250 mA
V_{GD} I_{GD}	$V_{\text{D}} = \frac{2}{3} V_{\text{DRM}}$ $T_{\text{VJ}} = 25^\circ\text{C}$		0.2 V 5 mA
I_{L}	$t_{\text{p}} = 10 \mu\text{s}$; $V_{\text{D}} = 6 \text{ V}$ $I_{\text{G}} = 0.45 \text{ A}$; $di_{\text{G}}/dt = 0.45 \text{ A}/\mu\text{s}$ $T_{\text{VJ}} = 0^\circ\text{C}$		700 mA
I_{H}	$V_{\text{D}} = 6 \text{ V}$; $R_{\text{GK}} = \infty$ $T_{\text{VJ}} = 0^\circ\text{C}$ $T_{\text{VJ}} = 70^\circ\text{C}$	55	300 mA mA
t_{q}	$I_{\text{T}} = 20 \text{ A}$; $t_{\text{p}} = 300 \mu\text{s}$; $di/dt = -20 \text{ A}/\mu\text{s}$ $V_{\text{R}} = 10 \text{ V}$; $dv/dt = 20 \text{ V}/\mu\text{s}$ $V_{\text{D}} = 800 \text{ V}$ $T_{\text{VJ}} = 70^\circ\text{C}$		100 μs
$I_{\text{RRM}} / \text{DRM}$	$V_{\text{R}} = V_{\text{RRM}}$; $V_{\text{D}} = V_{\text{DRM}}$ $T_{\text{VJ}} = 25^\circ\text{C}$ $T_{\text{VJ}} = 70^\circ\text{C}$		50 μA 200 μA
$I_{\text{DSM}} / \text{RSM}$	$V_{\text{R}} = V_{\text{RSM}}$; $V_{\text{D}} = V_{\text{DSM}}$ $T_{\text{VJ}} = 70^\circ\text{C}$		2 mA

Features

- high voltage thyristor
- chip technology for long term stability
- ISOPLUS i4-PAC™
- high voltage package
- isolated back surface
- enlarged creepage towards heatsink
- enlarged creepage between high voltage pins
- application friendly pinout
- high reliability
- industry standard outline

Component			
Symbol	Conditions	Maximum Ratings	
T_{VJ}		-10 ... +70	°C
T_{stg}		-40 ... +70	°C
V_{ISOL}	$I_{ISOL} \leq 1 \text{ mA}; 50/60 \text{ Hz}$	2500	V~
F_C	Mounting force with clip	20...120	N

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
d_s, d_A	A pin - K pin	7		
	pin - backside metal	5.5		
R_{thCH}	with heatsink compound		0.15	
Weight			9	



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.83	5.21	0.190	0.205
A1	2.59	3.00	0.102	0.118
A2	1.17	2.16	0.046	0.085
b	1.14	1.40	0.045	0.055
b2	1.47	1.73	0.058	0.068
b4	2.54	2.79	0.100	0.110
c	0.51	0.74	0.020	0.029
D	20.80	21.34	0.819	0.840
D1	14.99	15.75	0.590	0.620
D2	1.65	2.03	0.065	0.080
D3	20.30	20.70	0.799	0.815
E	19.56	20.29	0.770	0.799
E1	16.76	17.53	0.660	0.690
e	3.81 BSC		0.150 BSC	
e1	11.43 BSC		0.450 BSC	
L	19.81	21.34	0.780	0.840
L1	2.11	2.59	0.083	0.102
Q	5.33	6.20	0.210	0.244
R	2.54	4.57	0.100	0.180
W	-	0.10	-	0.004

Die konvexe Form des Substrates ist typ. <math>< 0.05 \text{ mm}</math> über der Kunststoffoberfläche der Bauteilunterseite
 The convex/bow of substrate is typ. <math>< 0.05 \text{ mm}</math> over plastic surface level of device bottom side