



DC COMPONENTS CO., LTD.  
DISCRETE SEMICONDUCTORS

DCR03B  
THRU  
DCR03F

TECHNICAL SPECIFICATIONS OF SENSITIVE GATE SILICON CONTROLLED RECTIFIERS  
VOLTAGE RANGE - 200 to 600 Volts CURRENT - 0.3 Ampere

Description

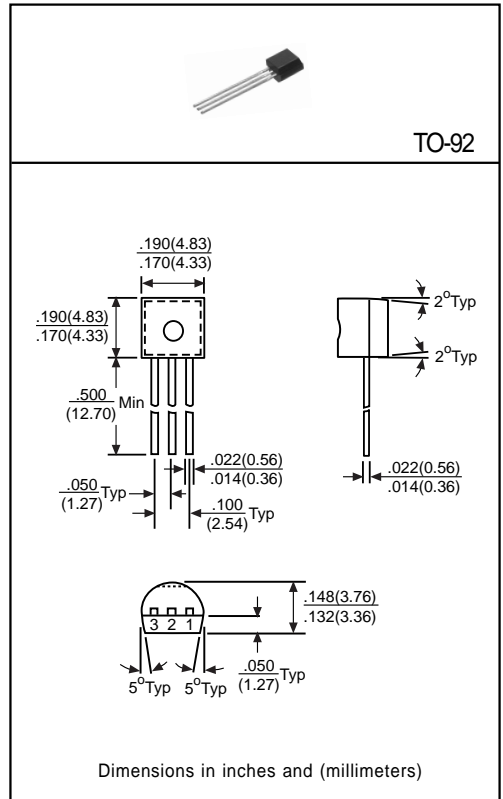
- \* Driven directly with IC and MOS device
- \* Feature proprietary, void-free glass passivated chips
- \* Available in voltage ratings from 200 to 600 volts
- \* Sensitive gate trigger current
- \* Designed for high volume, line-powered control application in relay lamp drivers, small motor controls, gate drivers for large thyristors

Pinning

1 = Gate, 2 = Anode, 3 = Cathode

Absolute Maximum Ratings (T<sub>A</sub>=25°C)

Characteristic	Symbol	Rating	Unit
Peak Repetitive Off-State Voltage and Reverse Voltage	DCR03B DCR03D DCR03F V <sub>DRM</sub> , V <sub>RRM</sub>	200 400 600	V
On-State Average Current (T <sub>A</sub> =30°C, 180° Conduction Angles)	I <sub>T(AV)</sub>	0.3	A
On-State RMS Current (T <sub>A</sub> =30°C, 180° Conduction Angles)	I <sub>T(RMS)</sub>	0.47	A
Peak Non-repetitive Surge Current (1/2 Cycle, Sine Wave 60Hz)	I <sub>TSM</sub>	8	A
Forward Peak Gate Current	I <sub>GM</sub>	0.1	A
Forward Peak Gate Power Dissipation	P <sub>GM</sub>	0.1	W
Forward Average Gate Power Dissipation	P <sub>G(AV)</sub>	0.01	W
Operating Junction Temperature	T <sub>J</sub>	-40 to +110	°C
Storage Temperature	T <sub>STG</sub>	-40 to +150	°C



Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Peak Repetitive Forward or Reverse Off-State Blocking Current	I <sub>DRM</sub> , I <sub>RRM</sub>	-	-	10	μA	V <sub>AK</sub> =Rated V <sub>DRM</sub> or V <sub>RRM</sub> R <sub>GK</sub> =1KΩ
		-	-	100		
Peak Forward On-State Voltage	V <sub>TM</sub>	-	-	1.7	V	I <sub>TM</sub> =0.3A Peak
Continuous DC Gate Trigger Current	I <sub>GT</sub>	-	-	200	μA	V <sub>AK</sub> =7V DC, R <sub>L</sub> =100Ω
Continuous DC Gate Trigger Voltage	V <sub>GT</sub>	-	-	0.8	V	V <sub>AK</sub> =7V DC, R <sub>L</sub> =100Ω
DC Holding Current	I <sub>H</sub>	-	-	5.0	mA	R <sub>GK</sub> =1KΩ
Critical Rate-of-Rise of Off-State Voltage	dv/dt	-	5.0	-	V/μS	R <sub>GK</sub> =1KΩ
Gate Controlled Turn-on Time(t <sub>b</sub> +t <sub>r</sub> )	T <sub>gt</sub>	-	2.2	-	μsec	I <sub>GT</sub> =10mA
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	-	75	-	°C/W	-