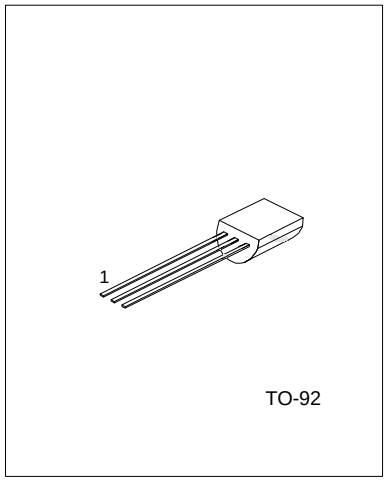
PLASTIC SILICON CONTROLLED RECTIFIERS



TO-92

1:CATHODE 2:GATE 3:ANODE

DESCRIPTION

PNPN devices designed for high volume, line-powered consumer applications such as relay and lamp drivers, small motor controls, gate drivers for larger thyristors, and sensing and detection circuits. Supplied in an inexpensive plastic TO-92 package which isreladily adaptable for use in automatic insertion equipment.

DESCRIPTION

*Sensitive Gate Trigger Current - 200μA Maximum
*Low Reverse and forward Blocking Current - 100μA Maximum, Tc=125°C
*Low Holding Current – 5mA Maximum
*Glass-Passivated Surface for Reliability and Uniformity
*Also Available with TO-5 or TO-18 Lead Form

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX	UNIT
Thermal Resistance, Junction to Case	R£ ∂C	75	°C/W
Thermal Resistance, Junction to Ambient	R£ ∂A	200	°C/W

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MAX	UNIT
Peak Reverse Blocking Voltage	V_{RRM}		V
MCR100-4		200	
MCR100-6		400	
MCR100-8		600	
Forward Current RMS	$I_{T(RMS)}$	0.8	A
Peak Forward Surge Current, TA=25°C (1/2 cycle, Sine Wave, 60Hz)	I_{TSM}	10	A
Circuit Fusing Considerations, TA=25°C (t=1 to 8.3 ms)	I^2t	0.415	A^2s
Peak Gate Power – Forward, TA=25°C	P_{GM}	0.1	W
Average Gate Power – Forward, TA=25°C	$P_{GF(AV)}$	0.01	W
Peak Gate Current – Forward, TA=25°C(300μs, 120PPS)	I_{GFM}	1	A
Peak Gate Voltage - Reverse	V_{GRM}	5	V
Operating Junction Temperature Range @ Rated VRRM and VDRM	Tj	-65 to +110	°C
Storage Temperature Range	Tstg	-40 to +150	°C
Lead Solder Temperature (<1/16" from case, 10 s max)		230	°C

ELECTRICAL CHARACTERISTICS (Tj=25°C unless otherwise stated)

PARAMETER		SYMBOL	MIN	MAX	UNIT
Peak Forward Blocking Voltage		VDRM			V
(Tc=125°C)	MCR100-4		200		
	MCR100-6		400		
	MCR100-8		600		
Peak Forward or Reverse Blocking Current		IDRM,IRRM			
(Rated VDRM or VRRM)	Tc=25°C			10	μA
	Tc=125°C			100	μA
Forward "On" Voltage (Note1)		VTM		1.7	V
(ITM=1A peak @ TA=25°C)					
Gate Trigger Current (continuous dc) (Note 2)	Tc=25 °C	IGT		200	μA
(Anode Voltage=7Vdc, RL=100Ω)					
Gate Trigger Voltage (continuous dc)	Tc=25 °C	VGT		0.8	V
(Anode voltage=7Vdc, RL=100Ω)	Tc=-40 °C			1.2	
(Anode Voltage=Rated VDRM, RL=100Ω)	Tc=125 °C		0.1		
Holding Current	Tc=25 °C	IH		5	mA
(Anode Voltage=7Vdc, initiating current=20mA)	Tc=-40 °C			10	

Notes: 1. Forward current applied for 1 ms maximum duration, duty cycle <=1%
2. RGK current is not included in measurement.