

# 2N1881-2N1885

## SILICON CONTROLLED RECTIFIERS

### FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

### MAXIMUM RATINGS

Rating	Symbol	2N1881	2N1882	2N1883	2N1884	2N1885	Unit
Repetitive peak off state voltage	$V_{DRM}$	30	60	100	150	200	Volts
Repetitive peak reverse voltage	$V_{RRM}$	30	60	100	150	200	Volts
DC on-state current 100°C ambient 100°C case	$I_T$			250 1.0			mA Amps
Repetitive peak on-state current	$I_{TRM}$			Up to 30			Amps
Peak one cycle surge (non-repetitive) on-state current	$I_{TSM}$			15			Amps
Peak gate current	$I_{GM}$			250			mA
Average gate current	$I_{G(AV)}$			25			mA
Reverse gate voltage	$V_{GR}$			3			Volts
Thermal resistance, junction to case	$R_{\theta JC}$			20			°C/W
Operating and storage temperature range	$T_J, T_{stg}$			-65 to 150			°C

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Characteristics	Symbol	Min	Typ	Max	Unit	Test Condition
<b>Subgroup 2 (25°C test)</b>						
Off-state current	$I_{DRM}$	-	0.5	10	$\mu\text{A}$	$V_{DRM} = \text{rating}, R_{GK} = 1\text{K}\Omega$
Reverse current	$I_{RRM}$	-	0.5	10	$\mu\text{A}$	$V_{RRM} = \text{rating}, R_{GK} = 1\text{K}\Omega$
Reverse gate current	$I_{GR}$	-	0.5	10	$\mu\text{A}$	$V_{GR} = 2\text{V}$
Gate trigger current	$I_{GT}$	-	0.2	2	mA	$V_D = 5\text{V}, R_{GS} = 10\text{K}\Omega$
Gate trigger voltage	$V_{GT}$	0.40	1.0	2	V	$V_D = 5\text{V}, R_{GS} = 100\Omega$
On-state voltage	$V_T$	-	1.5	2	V	$I_T = 1\text{A}(\text{pulse test})$
Holding current	$I_H$	-	2.0	-	mA	$I_G = -150\mu\text{A}, V_D = 5\text{V}$
Anode trigger current	$I_{AT}$	-	0.5	-	mA	$R_{GS} = 10\text{K}\Omega, V_D = 5\text{V}$
<b>Subgroup 3 (25°C test)</b>						
Turn-on time	$t_{on}$	-	0.2	-	$\mu\text{s}$	$I_G = 20\text{mA}, I_T = 0.5\text{A}, V_D = 30\text{V}$
Gate trigger – on pulse width	$t_{pg(on)}$	-	1.0	-	$\mu\text{s}$	$I_G = 20\text{mA}, I_T = 0.5\text{A}, V_D = 30\text{V}$
Turn-off time	$t_{off}$	-	1.0	-	$\mu\text{s}$	$I_T = 1\text{A}, I_R = 1\text{A}, R_{GK} = 1\text{K}\Omega$
Circuit commutated turn-off time	$t_q$	-	10	-	$\mu\text{s}$	$I_T = 1\text{A}, I_R = 1\text{A}, R_{GK} = 1\text{K}\Omega$
<b>Subgroup 3 (125°C test)</b>						
High temperature off-state current	$I_{DRM}$	-	15	200	$\mu\text{A}$	$R_{GK} = 1\text{K}\Omega, V_{DRM} = \text{rating}$
High temperature reverse current	$I_{RRM}$	-	15	200	$\mu\text{A}$	$R_{GK} = 1\text{K}\Omega, V_{RRM} = \text{rating}$

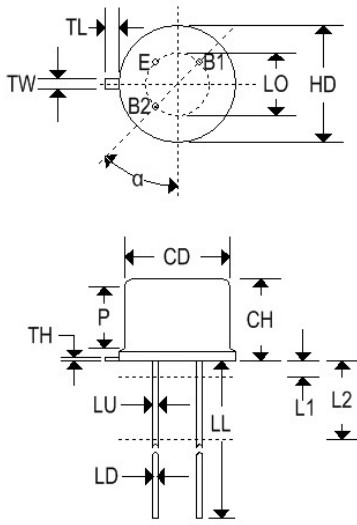
Voltage ratings apply over the operating temperature range, provided the gate is connected to the cathode through an appropriate resistor, or adequate gate bias is used.

# 2N1881-2N1885

## SILICON CONTROLLED RECTIFIERS

### MECHANICAL CHARACTERISTICS

Case:	TO-5
Marking:	Body painted, alpha-numeric
Pin out:	See below



Dim	TO-5			
	Inches		Millimeters	
	Min	Max	Min	Max
HD	0.335	0.370	8.510	9.400
CD	0.305	0.335	7.750	8.510
CH	0.240	0.260	6.100	6.600
LL	1.500	-	38.10	0
LD	0.016	0.021	0.410	0.530
LU	0.016	0.019	0.410	0.480
P	0.100	-	2.540	-
TL	0.029	0.045	0.740	1.140
TW	0.028	0.034	0.710	0.860
TH	0.009	0.125	0.230	3.180
LO	0.141 NOM		3.590 NOM	
$\alpha$	45°TP		45°TP	