



# CHARACTERISTICS

**C11 SERIES**

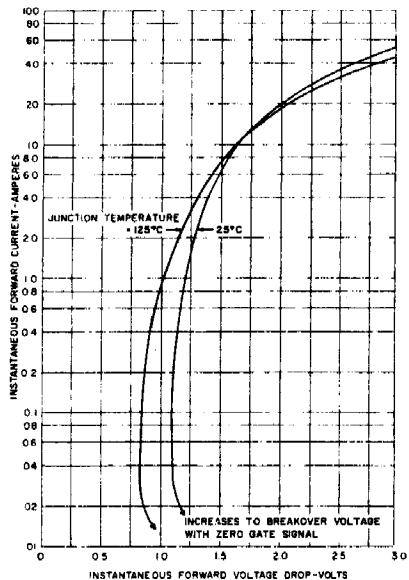
**2N1770-78**

**2N2619**

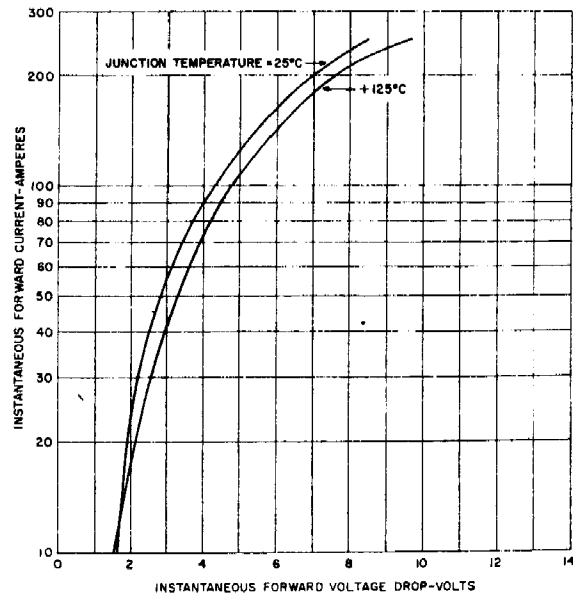
| Test  | Symbol                      | Min. | Typ. | Max. | Units                        | Test Conditions   |
|---|-----------------------------|------|------|------|------------------------------|---|
| Peak Reverse and Forward Blocking Current†<br>C11U (2N1770)<br>C11F (2N1771)<br>C11A (2N1772)<br>C11G (2N1773)<br>C11B (2N1774)<br>C11H (2N1775)<br>C11C (2N1776)<br>C11D (2N1777)<br>C11E (2N1778)<br>C11M (2N2619)            | $i_{R}$ and $i_{S}$         | —    | 4.5  | 9.0  | ma                           | $T_J = 125^\circ\text{C}$ , Gate Open<br>$v_{AC} = v_{CA} = 25$ Volts Peak  |
| Full Cycle Avg. Reverse and Forward Blocking Current†<br>C11U (2N1770)<br>C11F (2N1771)<br>C11A (2N1772)<br>C11G (2N1773)<br>C11B (2N1774)<br>C11H (2N1775)<br>C11C (2N1776)<br>C11D (2N1777)<br>C11E (2N1778)<br>C11M (2N2619) | $I_{R(AV)}$ and $I_{S(AV)}$ | —    | 2.3  | 4.5* | mAdc                         | $T_J = 60^\circ\text{C}$ , $I_a = 4.7\text{A}$ , half sine wave<br>180° Conduction Angle<br>$v_{AC} = v_{CA} = 25$ Volts Peak   |
| Gate Current to Fire  | $I_{GF}$                    | —    | 10   | 15   | mAdc                         | $V_{AC} = 12\text{Vdc}$ , $T_J = 25^\circ\text{C}$ , $R_{th} = 250$ ohms  |
|   |                             | —    | 20   | 30*  | mAdc                         | $V_{AC} = 12\text{Vdc}$ , $T_J = -65^\circ\text{C}$ , $R_{th} = 250$ ohms   |
|   |                             | —    | 4    | 8    | mAdc                         | $V_{AC} = 12\text{Vdc}$ , $T_J = 125^\circ\text{C}$ , $R_{th} = 250$ ohms   |
| Gate Voltage to Fire  | $V_{GF}$                    | —    | 1.3  | 2.0* | Vdc                          | $V_{AC} = 12\text{Vdc}$ , $T_J = -65^\circ$ to $+125^\circ\text{C}$ ,<br>$R_{th} = 250$ ohms  |
|   |                             | 0.3* | 0.7  | —    | Vdc                          | $v_{AC} = \text{Rated}$ , $T_J = 125^\circ\text{C}$ , $R_{th} = 250$ ohms   |
| Peak Forward Voltage Drop   | $v_F$                       | —    | 1.6  | 1.85 | v                            | $T_J = 25^\circ\text{C}$ , $i_F = 15\text{a}$ (single sinusoidal pulse, 4 ms wide)  |
| Holding Current   | $I_H$                       | —    | 8.0  | —    | mAdc                         | Anode Supply = 6 Vdc, $T_J = 25^\circ\text{C}$  |
| Turn-on Time  | $t_{on} + t_r$              | —    | 1.0  | —    | $\mu\text{sec}$              | $T_J = 25^\circ\text{C}$ , $i_F = 10\text{a}$ , $v_{AC} = \text{Rated}$ Gate Supply: 7 volt open circuit, 20 ohm, 0.1 $\mu\text{sec}$ max. rise time.                                     |
| Turn-off Time   | $t_{off}$                   | —    | 15   | —    | $\mu\text{sec}$              | $T_J = 125^\circ\text{C}$ , $i_F = 5\text{a}$ , $i_R = 5\text{a}$<br>$v_{AC}$ (Reapplied) = Rated. Rate of Rise of Reapplied Forward Blocking Voltage = 20 volts per microsecond maximum. |
| Thermal Resistance  | $\theta_{JC}$               | —    | 1.5  | 3.1  | $^\circ\text{C}/\text{Watt}$ | Junction to Case.   |

†Values apply for zero or negative gate voltage. Maximum case to ambient thermal resistance for which maximum PRV ratings apply = 18°C per watt.

\*Indicates data included on JEDEC type number registration.



**1. MAXIMUM FORWARD CHARACTERISTICS CONDUCTING STATE**



**2. MAXIMUM FORWARD CHARACTERISTICS HIGH CURRENT LEVEL — CONDUCTING STATE**