Electrical Parameter Terminology

Diode Rectifiers

di/dt (Critical Rate-of-rise of On-state Current) - Maximum value of the rate-of-rise of on-state current which a Thyristor can withstand without deleterious effect.

dv/dt (Critical Rate-of-rise of Off-state Voltage or Static dv/dt) - Minimum value of the rate-of-rise of principal voltage which will cause switching from the off state to the on state.

dv/dt(c) Critical Rate-of-rise of Commutation Voltage of a Triac (Commutating dv/dt) - Minimum value of the rate-of-rise of principal voltage which will cause switching from the off state to the on state immediately following on-state current conduction in the opposite quadrant.

I^2t (RMS Surge (Non-repetitive) On-state Fusing Current)- Measure of let-through energy in terms of current and time for fusing purposes.

I_{BO} (Breakover Current) - Principal current at the breakover point.

I_{DRM} (Repetitive Peak Off-state Current) - Maximum leakage current that may occur under the conditions of V_{DRM}.

I_{GT} (Gate Trigger Current) - Minimum gate current required to switch a Thyristor from the off state to the on state.

I_H (Holding Current) - Minimum principal current required to maintain the Thyristor in the on state.

I_{PP} (Peak Pulse Current) - Peak pulse current at a short time duration and specified waveshape.

I_{RRM} (Repetitive Peak Reverse Current) - Maximum leakage current that may occur under the conditions of V_{RRM}.

I_S (Switching Current) - Current at V_S when a SIDAC switches from the clamping state to on state.

$I_{T(RMS)}$ (On-state Current) - Anode cathode principal current that may be allowed under stated conditions, usually the full-cycle RMS current.

I_{TSM} (Surge (Non-repetitive) On-state Current) - Peak single cycle AC current pulse allowed.

$P_{G(AV)}$ (Average Gate Power Dissipation) - Value of gate power which may be dissipated between the gate and main terminal 1 (or cathode) average over a full cycle.

P_{GM} (Peak Gate Power Dissipation) - Maximum power which may be dissipated between the gate and main terminal 1 (or cathode) for a specified time duration.

$R_{\theta JA}$ (Thermal Resistance, Junction-to-Ambient) - Temperature difference between the Thyristor junction and ambient divided by the power dissipation causing the temperature difference under conditions of thermal equilibrium.

Note: Ambient is defined as the point where temperature does not change as a result of the dissipation.

$R_{\theta JC}$ (Thermal Resistance, Junction-to-case) - Temperature difference between the Thyristor junction and the Thyristor case divided by the power dissipation causing the temperature difference under conditions of thermal equilibrium.

t_{gt} (Gate-controlled Turn-on Time) - Time interval between the 10% rise of the gate pulse and the 90% rise of the principal current pulse during switching of a Thyristor from the off state to the on state.

t_q (Circuit-commutated Turn-off Time) - Time interval between the instant when the principal current has decreased to zero after external switching of the principal voltage circuit and the instant when the SCR is capable of supporting a specified principal voltage without turning on.

V_{BO} (Breakover Voltage) - Principal voltage at the breakover point.

V_{DRM} (Repetitive Peak Off-state Voltage) - Maximum allowable instantaneous value of repetitive off-state voltage that may be applied across a bidirectional Thyristor (forward or reverse direction) or SCR (forward direction only).

V_{GT} (Gate Trigger Voltage) - Minimum gate voltage required to produce the gate trigger current.

V_{RRM} (Repetitive Peak Reverse Voltage) - Maximum allowable instantaneous value of a repetitive reverse voltage that may be applied across an SCR without causing reverse current avalanche.

V_S (Switching Voltage) - Voltage point after V_{BO} when a SIDAC switches from a clamping state to on state.

V_T (On-state Voltage) - Principal voltage when the Thyristor is in the on state.

Diode Rectifiers

$I_{F(AV)}$ (Average Forward Current) - Average forward conduction current.

I_{FM} (Maximum (Peak) Reverse Current) - Maximum reverse leakage current that may occur at rated $V_{RRM.}$

$I_{(RMS)}$ (RMS Forward Current) - RMS forward conduction current.

I_{FSM} (Maximum (Peak) Forward (Non-repetitive) Surge Current) - Maximum (peak) forward single cycle AC surge current allowed for specified duration.

V_{FM} (Maximum (Peak) Forward Voltage Drop) - Maximum (peak) forward voltage drop from the anode to cathode at stated conditions.

V_R (Reverse Blocking Voltage) - Maximum allowable DC reverse blocking voltage that may be applied to the rectifier.

V_{RRM} (Maximum (Peak) Repetitive Reverse Voltage) - Maximum peak allowable value of a repetitive reverse voltage that may be applied to the rectifier.