Technical Information

Index of Symbols

C_{tot}	Capacitance, diode capacitance
C_L	Capacitance of load capacitor
f	Frequency
f_{in}	Frequency of input voltage
f_{max}	Max. frequency of voltage ot be rectified
f_p	Pulse frequency
f_O	Series resonance frequency
f_{BR}	Hum frequency
f_{Q1}	Cutoff frequency for Q = 1
G	Smoothing factor
h	Altitude above sea level
i_F	Instantaneous forward current
i_R	Instantaneous reverse current
I_F	Forward current
I_{FAV}	Average (rectified) forward current
I_{FRM}	Repetitive peak forward current
I_{FSM}	Surge forward current (non-repetitive)
$I_{F(OV)}$	Overload forward current
I_R	Reverse (leakage) current
I_{RM}	Reverse pulse current
I_{RMS}	RMS current
I_S	Switching current
I_Z	Zener current (operating current)
I_{ZK}	Zener current at breakdown region
I_{ZM}	Maximum Zener current
I_{ZS}	Surge Zener current
I_{ZT}	Zener test current
I_{ZSM}	Surge Zener current (non-repetitive)
I_{in}	Input current
I_{out}	Output current
I_0	Average (rectified) forward current
L_s	Series inductance
P	Power, power dissipation
P_D	Continuous power
P_{DC}	DC Power ($P_{DC} = V_{DC} \cdot I_{DC}$)
P_F	Power, generated by forward voltage and forward current
P_I	Pulse power
P_{RSM}	Reverse peak power
P_t	Power rating of transformer
P_{tot}	Total power dissipation
Q	Q-Factor, figure of merit
r_f	Dynamic forward resistance
r_s	Dynamic series resistance
r_{thA}	Pulse thermal resistance junction to ambient air
r_{thC}	Pulse thermal junction to case or stud
r_{zj}	Dynamic resistance in the breakdown region
r_{zth}	Thermal differential resistance in the breakdown region
r_{zu}	Static differential resistance in the breakdown region
R_d	Damping resistance
R_G	Generator output resistance
R_L	Load resistance
R_S	Series resistance
R_p	Primary copper resistance of transformer
R_s	Secondary copper resistance of transformer
R_t	Protective resistance for rectifiers, e.g. transformer equivalent resistance
R_{thA}	Thermal resistance junction to ambient air
R_{thC}	Thermal resistance junction to case or stud
R_{thS}	Thermal resistance heat sink to ambient air
S	Stabilization factor, length of edge of a colling fin
t	Time
t_{fr}	Forward revoery time
t_{on}	Switching-on time
t_p	Pulse duration
t_{rr}	Reverse recovery time
t_{th}	Thermal Run-In-Time
T	Temperature, duration of a full cycle
T_C	Case temperature, stud temperature
T_L	Lead temperature
T_S	Storge temperature
T_{amb}	Ambient temperature
T_j	Junction temperature
V_F	Instantaneous forward voltage
V_R	Instantaneous reverse voltage
V	Voltage
V_{BR}	Hum Voltage
$V_{(BR)R}$	Reverse breakdown voltage
V_D	Positive blocking voltage, diffusion potential
V_{DC}	DC voltage
V_F	Forward voltage
V_R	Reverse voltage, negative blocking voltage
V_{RF}	RF voltage
V_{RM}	Peak reverse voltage
V_{RMS}	RMS voltage
V_{RRM}	Repetitive peak reverse voltage
V_{RSM}	Surge peak reverse voltage (non-repetitive)
V_S	Switching voltge, supply voltage
V_Z	Zener voltage
V_{Z0}	Zener voltage, extra-polated for $I_Z = 0$
V_0	DC Voltage, half wave rectification
V_{fr}	Voltage rise when switching ON (forward recovery)
V_{in}	Input Voltage
V_{out}	Output Voltage

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Z_{ZK}	Zener impedance at I_{ZK}
Z_{ZT}	Zener impedance at I_{ZT}
$\int i^2dt$	Load integral
α	Angle
α_{IR}	Temperature coefficient of leakage current
α_C	Temperature coefficient of capacitance
α_{VF}	Temperature coefficient of forward voltage
α_{VZ}	Temperature coefficient of Zener voltage
η_V	Rectification efficiency (quotient fo the mean value of the rectified voltage and the peak value of the RF signal voltage)
Θ	Angle of current flow
ν	Ratio of pulse duration to full cycle, duty cycle
φ	Relative humidity
ω	Angular frequency