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2N3870 thru 2N3873 (SILICON)
2N3896 thru 2N3899
2N6171 thru 2N6174

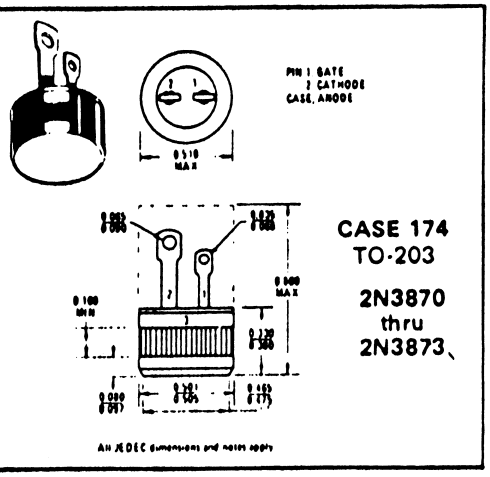
THYRISTORS
PNPN

35 AMPERES RMS
100-600 VOLTS

THYRISTORS
SILICON CONTROLLED RECTIFIERS

. . . designed for industrial and consumer applications such as power supplies, battery chargers, temperature, motor, light and welder controls.

- Economical for a Wide Range of Uses
- High Surge Current – I_{TSM} = 350 Amp
- Practical Level Triggering and Holding Characteristics – 10 mA (Typ) @ T_C = 25°C
- Rugged Construction in Either Pressfit, Stud or Isolated Stud Package



CASE 174
TO-203

2N3870
thru
2N3873

ELECTRICAL CHARACTERISTICS

At Maximum Ratings Unless Otherwise Specified and at Indicated Case Temperature (T_C)

CHARACTERISTIC	SYMBOL	LIMITS FOR ALL TYPES Unless Otherwise Specified			UNITS
		MIN.	TYP.	MAX.	
Peak Off-State Current: (Gate open, T_C = 100°C) Forward Current (I_{DOM}) at $V_D = V_{DROM}$ Reverse Current (I_{ROM}) at $V_R = V_{RROM}$	I_{DOM} or I_{ROM}				
2N3870, 2N3896, S6420A		–	0.2	2*	mA
2N3871, 2N3897, S6420B		–	0.25	2.5*	mA
2N3872, 2N3898, S6420D		–	0.3	3*	mA
2N3873, 2N3899, S6420M, S6400N, S6410N, S6420N		–	0.35	4*	mA
Instantaneous On-State Voltage:					
i_T = 69 A (peak), T_C = 25°C	v_T	–	–	1.85*	V
i_T = 100 A (peak), T_C = 25°C		–	1.7	2.1	V
DC Gate Trigger Voltage:					
V_D = 12 V (dc), R_L = 30 Ω, T_C = -40°C	V_{GT}	–	1.5	3*	V
V_D = 12 V (dc), R_L = 30 Ω, T_C = 25°C		–	1.1	2	V
For other case temperatures					
DC Gate Trigger Current:					
V_D = 12 V (dc), R_L = 30 Ω, T_C = -40°C	I_{GT}	–	46	80*	mA
V_D = 12 V (dc), R_L = 30 Ω, T_C = 25°C		1	25	40	mA
For other case temperatures					
Instantaneous Holding Current: Gate open,					
T_C = 25°C	i_{HO}	0.5	30	70	mA
For other case temperatures					
Gate Controlled Turn-On Time: (Delay Time + Rise Time) For $V_D = V_{DROM}$, I_{GT} = 200 mA, t_r = 0.1 μs, I_T = 30 A (peak), T_C = 25°C (See Fig. 12 & 14.)	t_{gt}	–	1.25	2	μs
Circuit Commutated Turn-Off Time: $V_D = V_{DROM}$, i_T = 18 A, pulse duration = 50 μs, dv/dt = 20 V/μs, -di/dt = -30 A/μs, I_{GT} = 200 mA, T_C = 80°C (See Fig. 15.)	t_q	–	20	40	μs
Critical Rate of Rise of Off-State Voltage: $V_D = V_{DROM}$, exponential voltage rise, Gate open, T_C = 100°C (See Fig. 16.)	dv/dt	10	100	–	V/μs
Thermal Resistance, Junction-to-Case: Steady-State					
Press-fit & stud types	$R_{\theta JC}$	–	–	0.9*	°C/W
Isolated-stud types		–	–	1	°C/W

*In accordance with JEDEC registration data filed for the JEDEC (2N-series) types.