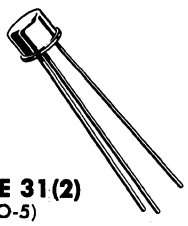
2N4212 thru 2N4216 (SILICON)



CASE 31(2)
(TO-5)

PNPN thyristors (silicon controlled rectifiers) designed for operation in mA/μA signal or detection circuits.

MAXIMUM RATINGS * (T_J = 125° C unless otherwise noted)

Rating	Symbol	Value	Unit
Peak Reverse Blocking Voltage (Note 1) 2N4212	$V_{RSM(rep)}$	25	Volt
2N4213		50	
2N4214		100	
2N4215		150	
2N4216		200	
Forward Current RMS (All Conduction Angles)	I_T	1.6	Amp
Peak Surge Current (One Cycle, 60 Hz) No Repetition until Thermal Equilibrium is Restored	$I_{FM(surge)}$	15	Amp
Peak Gate Power - Forward	P_{GM}	0.1	Watt
Average Gate Power - Forward	$P_{G(AV)}$	0.01	Watt
Peak Gate Current - Forward	I_{GM}	0.1	Amp
Peak Gate Voltage - Forward	V_{GFM}	6.0	Volt
Reverse	V_{GRM}	6.0	
Operating Junction Temperature Range	T_J	-65 to +125	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Lead Solder Temperature (> 1/16" from case, 10 sec. max)	-	+230	°C

* JEDEC Registered Values.

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted, R_{GK} = 1000 ohms)

Characteristic	Symbol	Min	Max	Unit
Peak Forward Blocking Voltage (Note 1) 2N4212 2N4213 2N4214 2N4215 2N4216	V_{DRM}	 25* 50* 100* 150* 200*	 - - - - 	Volt
Peak Reverse Blocking Current (Rated V_{RSM}, T_J = 125°C)	I_{RRM}	-	200*	μA
Peak Forward Blocking Current (Rated V_{DRM}, T_J = 125°C)	I_{DRM}	-	200*	μA
Forward "On" Voltage (I_F = 1.0 A Peak) (I_F = 3.14 A Peak)	V_F	 - -	 1.5 2.0*	Volt
Gate Trigger Current (Note 2) (Anode Voltage = 7.0 V, R_L = 100 ohms) (T_C = 25°C) (T_C = -65°C)	I_{GT}	 - -	 100 300*	μAdc
Gate Trigger Voltage (Anode Voltage = 7.0 V, R_L = 100 ohms, T_C = 25°C) (Anode Voltage = 7.0 V, R_L = 100 ohms, T_C = -65°C) (Anode Voltage = Rated V_{DRM}, R_L = 100 ohms, T_J = 125°C)	V_{GT} V_{GT} V_{GNT}	 - - 0.1*	 0.8 1.0* -	Volt
Holding Current (Anode Voltage = 7.0 V) T_C = 25°C T_C = -65°C	I_{HX}		3.0 7.0*	mA
Turn-On Time	t_{gt}	Circuit dependent, consult manufacturer		
Turn-Off Time	t_q			

* JEDEC Registered Values

Notes: 1. V_{RRM} and V_{DRM} can be applied for all types on a continuous dc basis without incurring damage.

2. R_{GK} current is not included in measurement.

Thyristor devices shall not be tested with a constant current source for forward or reverse blocking capability such that the voltage applied exceeds the rated blocking voltage.

Thyristor devices shall not have a positive bias applied to the gate concurrently with a negative potential applied to the anode.

FIGURE 1 — CASE TEMPERATURE vs CURRENT

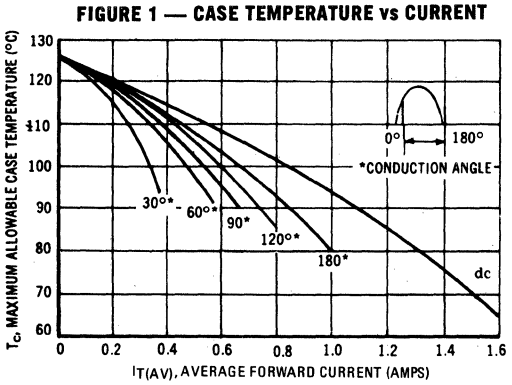


FIGURE 2 — AMBIENT TEMPERATURE vs CURRENT