

# SPECIAL DEVICES

## SILICON ASYMMETRICAL AC TRIGGER (SAS)

NTE Type Number	Case Style	Diagram Number	Switching Voltages (Volts)				Switching Current ( $\mu$ A)	Forward Voltage Drop (Volts)		Off-State Current (nA)	Maximum Continuous Current (mA)	Maximum Pulsed Current (mA)	Average Power Dissipation (mW)	Switching Speeds ( $\mu$ s)	
			$V_{S1}$		$V_{S2}$		$I_{S1}/I_{S2}$	$V_{F1}$	$V_{F2}$	$I_{12}/I_{21}$	$I_{21}$	$I_{21}$	$P_D$	Turn-On	Turn-Off
			Min	Max	Min	Max								$t_{on}$	$t_{off}$
6405	TO98	386	14	18	7	9	80	10	1.6	100	200	500	350	1	30

### DESCRIPTION:

The NTE6405 is an asymmetrical AC trigger integrated circuit for use in TRIAC phase controls. This device greatly reduces the snap-on effects that are present in symmetrical trigger circuits and minimizes control circuit hysteresis. This performance is possible with a single RC time constant, whereas a symmetrical circuit of comparable performance would require at least three additional passive components.

## SILICON UNILATERAL SWITCH (SUS)

NTE Type Number	Case Style	Diagram Number	Forward Switching Voltage (Volts)		Forward Current ( $\mu$ A)	Holding Current (mA)	Power Dissipation (mW)	DC Forward Anode Current (mA)	Peak Recurrent Forward Current (Amps)	Forward Voltage Drop @ $I_F$ (Volts)	Switching Speeds ( $\mu$ s)	
			$V_S$		$I_S$	$I_{Hold}$	$P_D$	$I_F$	$I_F(Peak)$	$V_F$	Turn-On	Turn-Off
			Min	Max							$t_{on}$	$t_{off}$
6404	TO98	5	7	9	200	0.75	300	175	1	1.5	1	25

### DESCRIPTION:

The NTE6404 is a silicon planar, monolithic integrated circuit having thyristor electrical characteristics closely approximating those of an "ideal" four layer diode. This device is designed to switch at 8V with a 0.02%/°C temperature coefficient. A gated lead is provided to eliminate rate effect, obtain triggering at lower voltages and to obtain transient free wave forms.

Silicon Unilateral Switches are specifically designed and characterized for use in monostable and bistable applications where low cost is of prime importance.

### Applications:

- SCR triggers
- Frequency dividers
- Ring counters
- Cross point switching
- Overvoltage sensors

## DIACS—SILICON 3-LAYER BILATERAL TRIGGER DIODES

NTE Type Number	Diagram Number	Breakover Voltage (Forward & Reverse) (Volts)	Maximum Breakover Current ( $\mu$ A)	Maximum Peak Pulse (Amps)	Minimum Switching Voltage Change (Both Directions) (Volts)	DO7/DO35 Maximum Power Dissipation (mW)
		$V_{BO}$	$I_{(BR)1}$ & $I_{(BR)2}$	$I_{Pulse}$	$\Delta V$	$P_D$
6407	130	$28 \pm 4$	100	2	6	250
6408	130	$32 \pm 4$	100	2	6	250
6411	130	$40 \pm 5$	100	2	6	250
6412	130	$63 \pm 7$	100	2	6	250

### DESCRIPTION:

The NTE6407, NTE6408, NTE6411, and NTE6412 bilateral trigger DIACs offer a range of voltage characteristics from 28 to 63 Volts.

The DIAC semiconductor is a full-wave or bidirectional thyristor. It is triggered from a blocking-to-conduction state for either polarity of applied voltage exceeds the breakover voltage rating of the DIAC.