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## NTE239 Silicon Controlled Switch (SCS)

**Description:**

The NTE239 is a silicon controlled switch in a TO72 type package designed for use as a driver for a numerical indicator tube and switching applications.

**Features:**

- Selective Breakover Voltage
- Low ON Voltage

**Absolute Maximum Ratings:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Collector–Base Voltage, $V_{CBO}$	
NPN .....	70V
PNP .....	–70V
Collector–Emitter Voltage (NPN Only, $R_{BE} = 10\text{k}\Omega$ ), $V_{CER}$ .....	70V
Collector–Emitter Voltage (PNP), $V_{CEO}$ .....	–70V
Emitter–Base Voltage, $V_{EBO}$	
NPN .....	5V
PNP .....	–70V
Emitter Current, $I_E$	
NPN .....	–100mA
PNP .....	100mA
Peak Emitter Current ( $t_p \leq 1\text{ms}$ , $\delta = 0.05$ ), $I_{EM}$	
NPN .....	–500mA
PNP .....	500mA
Collector Current (NPN Only), $I_C$	
Continuous .....	50mA
Peak .....	100mA
Power Dissipation, $P_D$ .....	250mW
Operating Junction Temperature, $T_J$ .....	+150°C
Storage Temperature Range, $T_{stg}$ .....	–55° to +175°C

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>NPN Transistor</b>						
Collector Cutoff Current	$I_{CER}$	$V_{CE} = 70\text{V}, R_{BE} = 10\text{k}\Omega$	–	10	100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$	–	30	1000	nA
DC Current Gain	$h_{FE}$	$V_{CE} = 2\text{V}, I_C = 10\text{mA}$	50	180	–	
<b>PNP Transistor</b>						
Emitter Cutoff Current	$-I_{EBO}$	$-V_{EB} = 70\text{V}, I_C = 0$	–	0.05	100	nA
DC Current Gain	$h_{FE}$	$V_{CB} = 0, I_E = 1\text{mA}$	0.72	–	2.5	
<b>Combined Device</b>						
Anode–Cathode Voltage	$V_{AK}$	$I_A = 50\text{mA}, I_C = 0, R_{BE} = 10\text{k}\Omega$	–	1.05	1.4	V
Holding Current	$I_H$	$R_{BE} = 10\text{k}\Omega, I_C = 10\text{mA}, -V_{BB} = 2\text{V}$	0.1	0.5	1.0	mA
Turn–Off Time	$t_{off}$	$R_{BE} = 10\text{k}\Omega$	–	6	12	$\mu\text{s}$

