

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, $R_{BE} = 10k\Omega$), V_{CER}	
Collector–Emitter Voltage (PNP), V_{CEO}	
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	
Operating Junction Temperature, T_J	
Storage Temperature Range, T_{stg}	

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

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

