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NTE2684

Silicon NPN Transistor High Current Switch TO126 Type Package

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

Collector–Base Voltage (Open Emitter), V_{CBO}	120V
Collector–Emitter Voltage (Open Base), V_{EBO}	75V
Emitter–Base Voltage (Open Collector), V_{EBO}	5V
DC Collector Current, I_C	5A
Peak Collector Current, I_{CM}	10A
Peak Base Current, I_{BM}	2A
Total Power Dissipation ($T_C \leq +75^\circ\text{C}$), P_T	15W
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	-65° to +150°C
Thermal Resistance, Junction–to–Ambient, R_{thJA}	100K/W
Thermal Resistance, Junction–to–Case, R_{thJC}	5K/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5A, I_B = 0.5A$	–	–	0.9	V	
		$I_C = 7A, I_B = 0.7A$	–	–	1.2	V	
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 5A, I_B = 0.5A$	–	–	1.7	V	
		$I_C = 7A, I_B = 0.7A$	–	–	2.0	V	
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100V,$ $I_E = 0$		–	–	0.1	$\leq A$
			$T_J = +100^\circ\text{C}$	–	–	10	$\leq A$
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V, I_C = 0$	–	–	0.1	$\leq A$	
DC Current Gain	h_{FE}	$I_C = 0.5A, V_{CE} = 10V$	45	–	450		
Collector Capacitance	C_C	$I_E = 0, V_{CB} = 10V, f = 1\text{MHz}$	–	40	–	pF	
Transition Frequency	f_T	$I_C = 0.5A, V_{CE} = 5V, f = 100\text{MHz}$	–	100	–	MHz	
Turn–On Time	t_{on}	$I_{Con} = 1A, I_{Bon} = -I_{Boff} = 0.1A$	–	60	100	ns	
		$I_{Con} = 2A, I_{Bon} = -I_{Boff} = 0.2A$	–	–	80	ns	
		$I_{Con} = 5A, I_{Bon} = -I_{Boff} = 0.5A$	–	180	300	ns	
Turn–Off Time	t_{off}	$I_{Con} = 1A, I_{Bon} = -I_{Boff} = 0.1A$	–	600	800	ns	
		$I_{Con} = 2A, I_{Bon} = -I_{Boff} = 0.2A$	–	450	700	ns	
		$I_{Con} = 5A, I_{Bon} = -I_{Boff} = 0.5A$	–	350	500	ns	

