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**NTE2688**  
**Silicon NPN Transistor**  
**Fast Switching for High Frequency Inverter**  
**TO220 Type Package**

**Features:**

- Collector–Emitter Sustaining Voltage:  $V_{CE(sus)} = 450V$  Min
- Fast Switching Speed
- Low Saturation Voltage

**Applications:**

- Switching Regulators
- High Frequency Inverters
- General Purpose Power Amplifiers

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

Collector–Base Voltage, $V_{CBO}$ .....	600V
Collector–Emitter Voltage, $V_{CEO}$ .....	450V
Collector–Emitter Voltage ( $V_{EB} = 5V$ ), $V_{CEX}$ .....	600V
Emitter–Base Voltage, $V_{EBO}$ .....	7V
Collector Current, $I_C$	
Continuous .....	8A
Peak .....	16A
Base Current, $I_B$	
Continuous .....	4A
Peak .....	8A
Total Power Dissipation ( $T_C = +25^\circ C$ ), $P_D$ .....	60W
Operating Junction Temperature, $T_J$ .....	+150°C
Storage Temperature Range, $T_{stg}$ .....	-55° to +150°C
Thermal Resistance, Junction–to–Case, $R_{thJC}$ .....	2.08°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 0.2\text{A}, I_B = 0\text{A}$	450	-	-	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4\text{A}, I_B = 0.8\text{A}$	-	-	1.0	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 4\text{A}, I_B = 0.8\text{A}$	-	-	1.5	V
Collector Cutoff Current	$I_{CBO}$	At rated voltage	-	-	100	A
	$I_{CEO}$	At rated voltage	-	-	100	A
Emitter Cutoff Current	$I_{EBO}$	At rated voltage	-	-	100	A
DC Current Gain	$h_{FE}$	$I_C = 4\text{A}, V_{CE} = 5\text{V}$	10	-	-	
		$I_C = 1\text{mA}, V_{CE} = 5\text{V}$	5	-	-	
Current Gain - Bandwidth Product	$f_T$	$I_C = 0.8\text{A}, V_{CE} = 10\text{V}$	-	20	-	MHz
Turn-On Time	$t_{on}$	$I_C = 4\text{A}, I_{B1} = 0.8\text{A}, I_{B2} = -1.6\text{A}, R_L = 37.5^\circ, V_{BB2} = 4\text{V}$	-	-	0.5	s
Turn-Off Time	$t_{off}$		-	-	2.0	s
Fall Time	$t_f$		-	-	0.2	s

