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NTE2685 (NPN) & NTE2686 (PNP) Silicon Complementary Darlington Transistors Audio Power Output TO3PML Type Package

Features:

- Collector–Emitter Breakdown Voltage: $V_{(BR)CEO} = 150V$ Min
- High DC Current Gain: $h_{FE} = 5000$ Min @ $I_C = 6A$, $V_{CE} = 4V$
- Low Collector–Emitter Saturation Voltage: $V_{CE(sat)} = 2.5V$ Max @ $I_C = 6A$, $I_B = 6mA$

Applications:

- Audio
- Series Regulator
- General Purpose

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

Collector–Base Voltage, V_{CBO}	160V
Collector–Emitter Voltage, V_{CEO}	150V
Emitter–Base Voltage, V_{EBO}	5V
Continuous Collector Current, I_C	8A
Continuous Base Current, I_B	1A
Collector Power Dissipation ($T_C = +25^\circ C$), P_D	75W
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	–55° to +150°C

Electrical Characteristics: ($T_C = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 30mA$, $I_B = 0$	150	–	–	V
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 6A$, $I_B = 6mA$	–	–	2.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 6A$, $I_B = 6mA$	–	–	3.0	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 160V$, $I_E = 0$	–	–	100	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V$, $I_C = 0$	–	–	100	μA
DC Current Gain	h_{FE}	$V_{CE} = 4V$, $I_C = 6A$	4000	–	–	
Output Capacitance	C_{OB}	$I_E = 0$, $V_{CB} = 10V$, $f_{test} = 1MHz$	–	85	–	pF
Transition Frequency	f_T	$V_{CE} = 12V$, $I_C = 1A$	–	80	–	MHz
NTE2685			–	65	–	MHz
NTE2686						

Electrical Characteristics (Cont'd): ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Time NTE2685	t_{on}	$I_C = 6\text{A}, I_{B1} = -I_{B1} = 6\text{mA},$ $V_{CC} = 60\text{V}, R_L = 10\Omega$	-	0.6	-	μs
NTE2686			-	0.7	-	μs
Storage Time NTE2685	t_{stg}		-	10	-	μs
NTE2686			-	0.6	-	μs
Fall Time	t_f		-	0.9	-	μs

