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BDV64 (PNP) & BDV65 (NPN) Silicon Complementary Transistors Darlington Power Amp, Switch TO-3PN Type Package

Description:

The BDV64 (PNP) and BDV65 (NPN) are silicon Darlington complementary power transistors in a TO-3PN type package designed for general purpose amplifier and low speed switching applications.

Features:

- Collector-Emitter Sustaining Voltage: $V_{CEO(sus)} = 60V$ Min
- Collector-Emitter Saturation Voltage: $V_{CE(sat)} = 2V$ Max @ $I_C = 5A$
- Monolithic Construction with Built-In Base-Emitter Shunt Resistor

Absolute Maximum Ratings:

Collector-Emitter Voltage, V_{CEO}	60V
Collector-Base Voltage, V_{CB}	60V
Emitter-Base Voltage, V_{EB}	5V
Collector Current, I_C	
Continuous	12A
Peak	20A
Base Current, I_B	500mA
Total Device Dissipation ($T_C = +25^\circ C$), P_D	125W
Derate Above $+25^\circ C$	1W/ $^\circ C$
Operating Junction Temperature Range, T_J	-65° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ C$
Thermal Resistance, Junction-to-Case, R_{thJC}	1.0 $^\circ C/W$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 30mA, I_B = 0$, Note 1	60	-	-	V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 30V, I_B = 0$	-	-	1.0	mA
	I_{CBO}	$V_{CB} = 60V, I_E = 0$	-	-	0.4	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V$	-	-	5.0	mA

Note 1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2\%$.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	$I_C = 1\text{A}, V_{CE} = 4\text{V}$	-	2500	-	
		$I_C = 5\text{A}, V_{CE} = 4\text{V}$	1000	-	-	
		$I_C = 10\text{A}, V_{CE} = 4\text{V}$	-	500	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 20\text{mA}$	-	-	2.0	V
Base-Emitter ON Voltage	$V_{BE(on)}$	$I_C = 5\text{A}, V_{CE} = 4\text{V}$	-	-	2.5	V
Dynamic Characteristics						
Small-Signal Current Gain	h_{fe}	$I_C = 5\text{A}, V_{CE} = 4\text{V}, f = 1\text{MHz}$	40	-	-	
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	300	pF

Note 1. Pulse Test: Pulse Width = $300\mu\text{s}$, Duty Cycle $\leq 2\%$.

