

BDY55 – BDY56

NPN SILICON TRANSISTORS, DIFFUSED MESA

LF Large Signal Power Amplification
High Current Fast Switching

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CEO}	Collector-Emitter Voltage	BDY55	60	V
		BDY56	120	
V_{CBO}	Collector-Base Voltage	BDY55	100	V
		BDY56	150	
V_{EBO}	Emitter-Base Voltage	BDY55 BDY56	7	V
I_C	Collector Current	BDY55 BDY56	15	A
I_B	Base Current	BDY55 BDY56	7	A
P_{TOT}	Power Dissipation	@ $T_C = 25^\circ$ BDY55 BDY56	117	Watts
T_J	Junction Temperature	BDY55 BDY56	200	$^\circ\text{C}$
T_S	Storage Temperature	BDY55 BDY56	65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	BDY55 BDY56	1.5	$^\circ\text{C/W}$

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$V_{CE(SUS)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=200\text{ mA}$, $I_B=0$	BDY55 60 BDY56 120	- - -	- -	V
I_{CEO}	Collector-Emitter Cutoff Current	$V_{CE}=30\text{ V}$	BDY55	-	0.7	mA
		$V_{CE}=60\text{ V}$	BDY56	-	0.5	
I_{EBO}	Emitter-Base Cutoff Current	$V_{EB}=7\text{ V}$	BDY55	-	5.0	mA
			BDY56	-	3.0	
I_{CEX}	Collector-Emitter Cutoff Current	$V_{CE}=100\text{ V}$ $V_{BE}=-1.5\text{ V}$	BDY55	-	5.0	mA
		$V_{CE}=100\text{ V}$ $V_{BE}=-1.5\text{ V}$ $T_{CASE}=150^\circ\text{C}$		-	30	
		$V_{CE}=150\text{ V}$ $V_{BE}=-1.5\text{ V}$	BDY56	-	3.0	
		$V_{CE}=150\text{ V}$ $V_{BE}=-1.5\text{ V}$ $T_{CASE}=150^\circ\text{C}$		-	30	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=4.0\text{ A}$, $I_B=0.4\text{ A}$	BDY55 BDY56	-	1.1	V
		$I_C=10\text{ A}$, $I_B=3.3\text{ A}$	BDY55 BDY56	-	2.5	
V_{BE}	Base-Emitter Voltage (*)	$I_C=4.0\text{ A}$, $V_{CE}=4.0\text{ V}$	BDY55 BDY56	-	1.8	V
h_{21E}	Static Forward Current transfer ratio (*)	$V_{CE}=4\text{ V}$, $I_C=4\text{ A}$	BDY55 BDY56	20	70	V
		$V_{CE}=4\text{ V}$, $I_C=10\text{ A}$	BDY55 BDY56	10		
f_T	Transition Frequency	$V_{CE}=4.0\text{ V}$, $I_C=1.0\text{ A}$, $f=10\text{ MHz}$	BDY55 BDY56	10	-	MHz

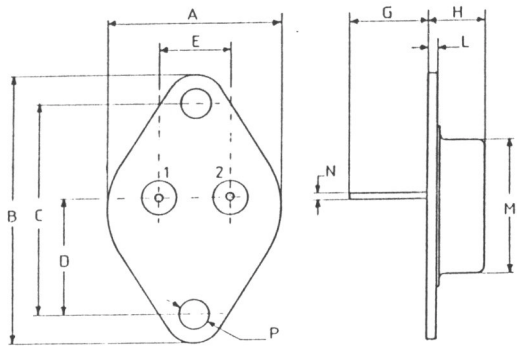
BDY55 – BDY56

Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
$t_d + t_r$	Turn-on time	$I_C=5\text{ A}$, $I_B=1\text{ A}$	BDY55 BDY56	-	-	0.5	μs
$t_s + t_f$	Turn-off time	$I_C=5\text{ A}$, $I_{B1}=1\text{ A}$, $I_{B2}=-0.5\text{ A}$	BDY55 BDY56	-	-	2	μs

(*) Pulse Width $\approx 300\text{ }\mu\text{s}$, Duty Cycle $\angle 2.0\%$

MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,45	1
B	38,8	1,52
C	30,09	1,184
D	17,11	0,67
E	9,78	0,38
G	11,09	0,43
H	8,33	0,32
L	1,62	0,06
M	19,43	0,76
N	1	0,04
P	4,08	0,16



Pin 1 :	Base
Pin 2 :	Collector
Case :	Emitter