



BDY55 – BDY56

NPN SILICON TRANSISTORS, DIFFUSED MESA

The BDY55 and BDY56 are mounted in TO-3 metal package.
 LF Large Signal Power Amplification
 High Current Fast Switching.
 Compliance to RoHS.

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		7	V
I_C	Collector Current		15	A
I_B	Base Current		7	A
P_{TOT}	Power Dissipation	@ $T_C = 25^\circ$	117	W
T_J	Junction Temperature		200	$^\circ C$
T_S	Storage Temperature		-65 to +200	

THERMAL CHARACTERISTICS

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

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

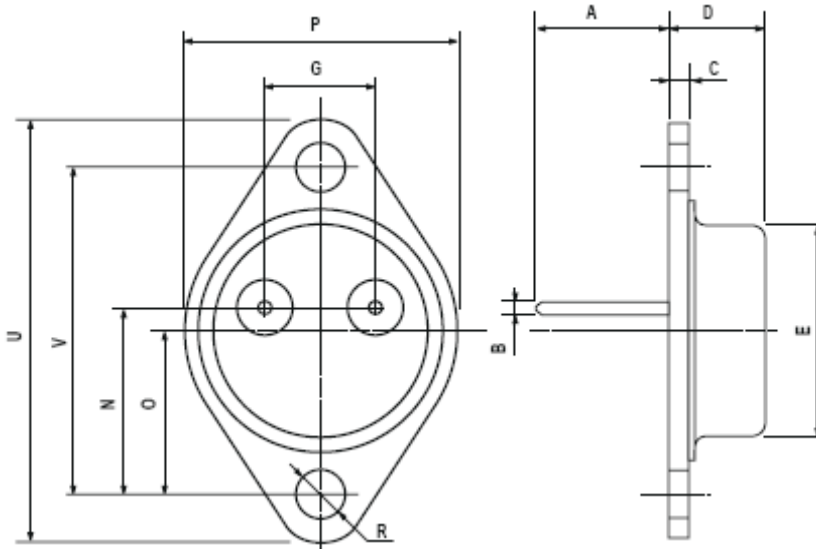
Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage (*)	$I_C = 200\text{ mA}$ $I_B = 0$	BDY55	60	-	-	V
			BDY56	120	-	-	
I_{CEO}	Collector-Emitter Cutoff Current	$V_{CE} = 30\text{ V}$	BDY55	-	-	0.7	mA
		$V_{CE} = 60\text{ V}$	BDY56	-	-	0.5	
I_{EBO}	Emitter-Base Cutoff Current	$V_{EB} = 7\text{ V}$	BDY55	-	-	5	mA
			BDY56	-	-	3	
I_{CEX}	Collector-Emitter Cutoff Current	$V_{CE} = 100\text{ V}$ $V_{BE} = -1.5\text{ V}$	BDY55	-	-	5	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	
		$V_{CE} = 150\text{ V}$ $V_{BE} = -1.5\text{ V}$ $T_{CASE} = 150^\circ\text{C}$		-	-	30	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = 4.0\text{ A}$ $I_B = 0.4\text{ A}$	BDY55	-	-	1.1	V
			BDY56			1.1	
		$I_C = 10\text{ A}$ $I_B = 3.3\text{ A}$	BDY55	-	-	2.5	
			BDY56			2.5	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = 10\text{ A}$ $I_B = 3.3\text{ A}$	BDY55	-	-	2.5	
			BDY56	-	-	2.5	
V_{BE}	Base-Emitter Voltage (*)	$I_C = 4.0\text{ A}$ $V_{CE} = 4.0\text{ V}$	BDY55	-	-	1.8	V
			BDY56			1.8	
H_{FE}	Static Forward Current transfer ratio (*)	$V_{CE} = 4\text{ V}$ $I_C = 4\text{ A}$	BDY55	20	-	70	V
			BDY56			70	
		$V_{CE} = 4\text{ V}$ $I_C = 10\text{ A}$	BDY55	10			
			BDY56				
f_T	Transition Frequency	$V_{CE} = 4.0\text{ V}$ $I_C = 1.0\text{ A}$, $f = 10\text{ MHz}$	BDY55	10	-	-	MHz
			BDY56			-	
$t_d + t_r$	Turn-on time	$I_C = 5\text{ A}$ $I_B = 1\text{ A}$	BDY55	-	-	0.5	μs
			BDY56			0.5	
$t_s + t_f$	Turn-off time	$I_C = 5\text{ A}$ $I_{B1} = 1\text{ A}$ $I_{B2} = -0.5\text{ A}$	BDY55	-	-	2	μs
			BDY56			2	

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

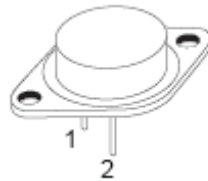
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MECHANICAL DATA CASE TO-3

DIMENSIONS (mm)		
	min	max
A	11	13.10
B	0.97	1.15
C	1.5	1.65
D	8.32	8.92
F	19	20
G	10.70	11.1
N	16.50	17.20
P	25	26
R	4	4.09
U	38.50	39.30
V	30	30.30



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector



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