



## BDY53 – BDY54

### 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	BDY53	60	V	
		BDY54	120		
$V_{CBO}$	Collector-Base Voltage	BDY53	100	V	
		BDY54	180		
$V_{EBO}$	Emitter-Base Voltage	BDY53	7	V	
		BDY54			
$I_C$	Collector Current	BDY53	12	A	
		BDY54			
$I_B$	Base Current	BDY53	5	A	
		BDY54			
$P_{TOT}$	Power Dissipation	@ $T_C = 25^\circ$	BDY53	60	Watts
			BDY54		
$T_J$	Junction Temperature	BDY53	200	$^\circ\text{C}$	
		BDY54			
$T_{Stg}$	Storage Temperature	BDY53	-65 to +200	$^\circ\text{C}$	
		BDY54			

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## ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

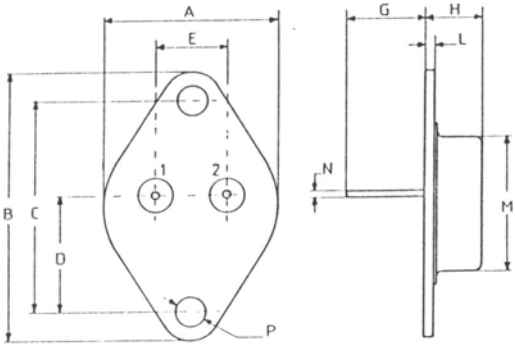
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=100\text{ mA}, I_B=0$	<b>BDY53</b>	60	-	-	V
			<b>BDY54</b>	120	-	-	
$I_{EBO}$	Emitter-Base Cutoff Current	$V_{EB}=7\text{ V}$	<b>BDY53</b>	-	-	3.0	mA
$I_{CEX}$	Collector-Emitter Cutoff Current	$V_{CE}=100\text{ V}$ $V_{BE}=-1.5\text{ V}$ $T_{CASE}=150^\circ\text{C}$	<b>BDY53</b>	-	-	15	mA
		$V_{CE}=150\text{ V}$ $V_{BE}=-1.5\text{ V}$ $T_{CASE}=150^\circ\text{C}$	<b>BDY54</b>	-	-		
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=4.0\text{ A}, I_B=0.4\text{ A}$	<b>BDY53</b> <b>BDY54</b>	-	-	1.1	V
		$I_C=7.0\text{ A}, I_B=1.4\text{ A}$	<b>BDY53</b> <b>BDY54</b>	-	-	2.2	
$V_{BE(SAT)}$	Base-Emitter Voltage (*)	$I_C=4.0\text{ A}, I_B=0.4\text{ A}$	<b>BDY53</b> <b>BDY54</b>	-	-	2	V
		$I_C=7.0\text{ A}, I_B=1.4\text{ A}$	<b>BDY53</b> <b>BDY54</b>	-	-	2.5	
$h_{21E}$	Static Forward Current transfer ratio (*)	$V_{CE}=1.5\text{ V}, I_C=2\text{ A}$	<b>BDY53</b> <b>BDY54</b>	20	-	60	V
$f_T$	Transition Frequency	$V_{CE}=4.0\text{ V}, I_C=0.5\text{ A}, f=10\text{ MHz}$	<b>BDY53</b> <b>BDY54</b>	20	-	-	MHz
$t_d + t_r$	Turn-on time	$I_C=5\text{ A}, I_B=1\text{ A}$	<b>BDY53</b> <b>BDY54</b>	-	0.3	-	$\mu\text{s}$
$t_s + t_f$	Turn-off time	$I_C=5\text{ A},$ $I_{B1}=1\text{ A},$ $I_{B2}=-0.5\text{ A}$	<b>BDY53</b> <b>BDY54</b>	-	1.8	-	$\mu\text{s}$

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

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## 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 :	Emitter
Case :	Collector