



## NPN BDY53 – BDY54

### SILICON TRANSISTORS, DIFFUSED MESA

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

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### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

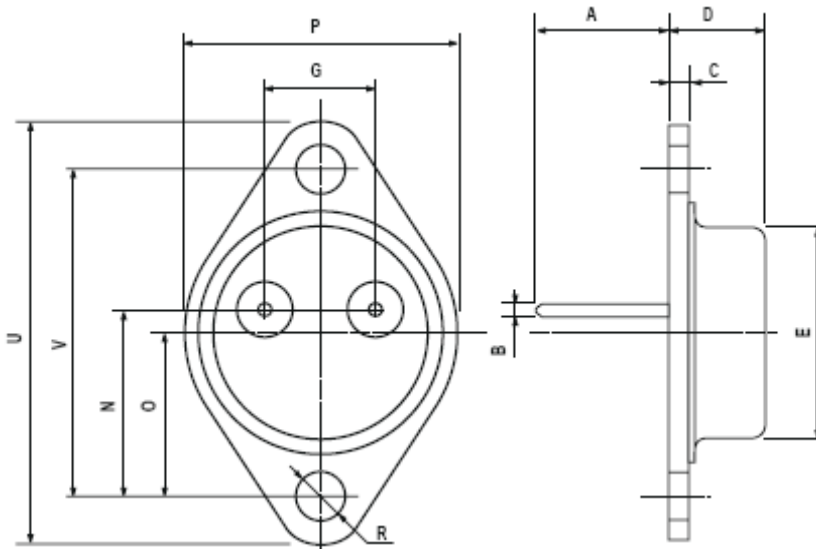
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=100\text{ mA}, I_B=0$	BDY53	60	-	-	V
			BDY54	120	-	-	
$I_{EBO}$	Emitter-Base Cutoff Current	$V_{EB}=7\text{ V}$	BDY53	-	-	3.0	mA
			BDY54				
$I_{CEX}$	Collector-Emitter Cutoff Current	$V_{CE}=100\text{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

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

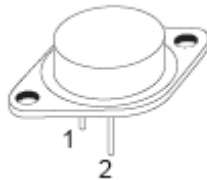
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### MECHANICAL DATA CASE TO-3

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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