BDY23 – 180T2
BDY24 – 181T2
BDY25 – 182T2

NPN SILICON TRANSISTORS, DIFFUSED MESA

They are NPN transistors mounted in Jedec TO-3.
LF Large Signal Power Amplification.
High Current Fast Switching.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CEO}	Collector-Emitter Voltage	BDY23, 180T2	60	V
		BDY24, 181T2	90	
		BDY25, 182T2	140	
V_{CBO}	Collector-Base Voltage	BDY23, 180T2	60	V
		BDY24, 181T2	100	
		BDY25, 182T2	200	
V_{EBO}	Emitter-Base Voltage	BDY23, 180T2 BDY24, 181T2 BDY25, 182T2	10	V
I_C	Collector Current	BDY23, 180T2 BDY24, 181T2 BDY25, 182T2	6	A
I_B	Base Current	BDY23, 180T2 BDY24, 181T2 BDY25, 181T2	3	A
P_{TOT}	Power Dissipation	@ T_C = 25°	87.5	Watts
T_J	Junction Temperature		-65 to +200	℃
T_S	Storage Temperature			

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	2	℃/W

BDY23 – 180T2
BDY24 – 181T2
BDY25 – 182T2

ELECTRICAL CHARACTERISTICS

TC=25℃ unless otherwise noted

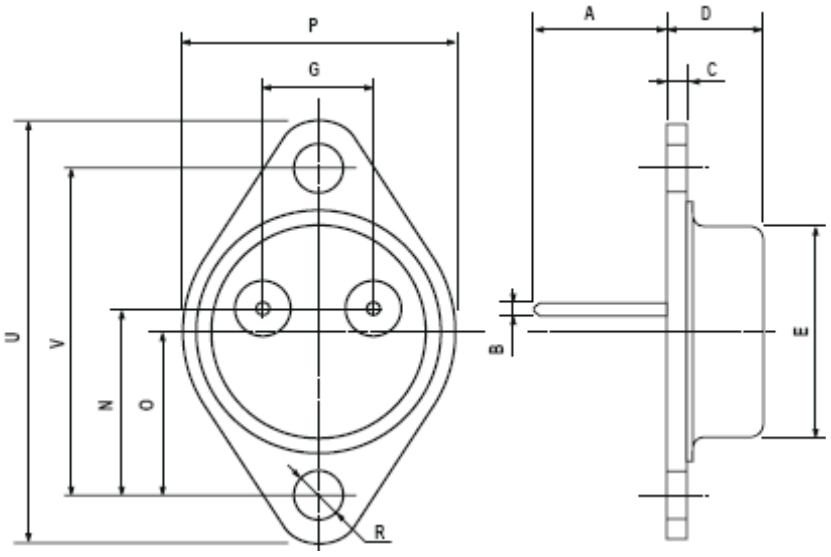
Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$V_{CEO(BR)}$	Collector-Emitter Breakdown Voltage (*)	I_C=50 mA I_B=0	BDY23, 180T2	60	-	-	V
			BDY24, 181T2	80	-	-	
			BDY25, 182T2	140	-	-	
I_{CEO}	Collector-Emitter Cutoff Current	V_{CE}=60 V	BDY23	-	-	1.0	mA
		V_{CE}=90 V	BDY24	-	-		
		V_{CE}=140 V	BDY25	-	-		
I_{EBO}	Emitter-Base Cutoff Current	V_{EB}=10 V	BDY23, 180T2	-	-	1.0	mA
			BDY24, 181T2				
			BDY25, 182T2				
I_{CES}	Collector-Emitter Cutoff Current	V_{CE}=60 V V_{BE}=0 V	BDY23, 180T2	-	-	0.5	mA
		V_{CE}=100 V V_{BE}=0 V	BDY24, 181T2	-	-	1.0	
		V_{CE}=180 V V_{BE}=0 V	BDY25, 182T2	-	-	1.0	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	I_C=2.0 A, I_B=0.25 A	BDY23, 180T2	-	-	1	V
			BDY24, 181T2	-	-	0.6	
			BDY25, 182T2	-	-	0.6	
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (*)	I_C=3 mA	BDY23, 180T2	60	-	-	V
			BDY24, 181T2	100	-	-	
			BDY25, 182T2	200	-	-	
$V_{BE(SAT)}$	Base-Emitter Voltage (*)	I_C=2.0 A, I_B=0.25 A	BDY23, 180T2	-	-	2.0	V
			BDY24, 181T2	-	-	1.2	
			BDY25, 182T2	-	-	1.2	
h_{21E}	Static Forward Current transfer ratio (*)	V_{CE}=4 V I_C=1 A	A	-	55	-	-
			B	-	65	-	
			C	-	90	-	
		V_{CE}=4 V I_C=2 A	A	15	20	45	
			B	30	45	90	
			C	75	82	100	
f_T	Transition Frequency	V_{CE}=15 V, I_C=0.5 A, f=10 MHz		10	-	-	MHz
$t_d + t_r$	Turn-on time	I_C=5 A, I_B=1 A		-	0.3	0.5	μs
$t_s + t_f$	Turn-off time	I_C=5 A, I_{B1}=1 A, I_{B2}=-0.5 A		-	0.3	0.5	μs

(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%

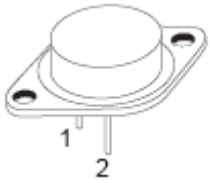
BDY23 – 180T2
BDY24 – 181T2
BDY25 – 182T2

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



Revised September 2012