



NPN BDY57 – BDY58

SILICON TRANSISTORS, DIFFUSED MESA

The BDY57 and BDY58 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	BDY57	80	V
		BDY58	125	
V_{CBO}	Collector-Base Voltage	BDY57	120	V
		BDY58	160	
V_{EBO}	Emitter-Base Voltage	—	10	V
I_C	Collector Current		25	A
I_B	Base Current		6	A
P_{TOT}	Power Dissipation	@ TC = 25°	175	W
T_{JTS}	Junction Temperature Storage Temperature		-65 to +200	°C

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	1	°C/W

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

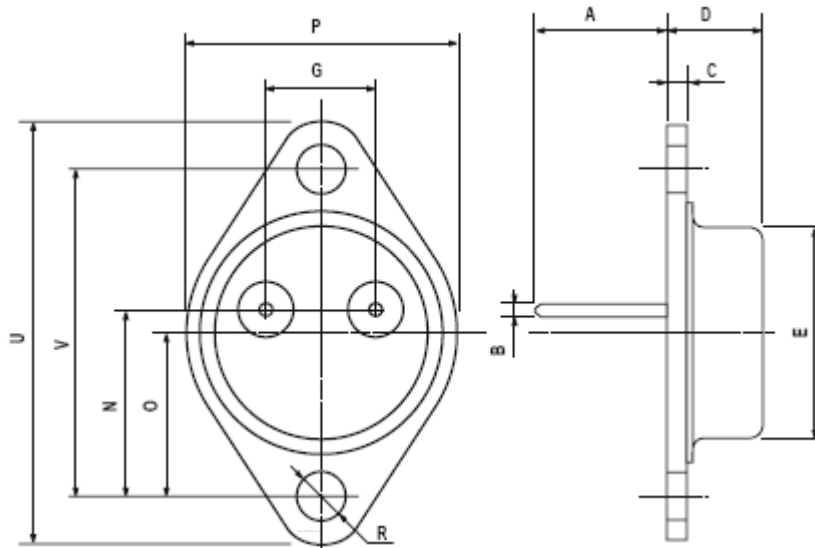
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=100\text{ mA}, I_B=0$	BDY57	80	-	-	V
			BDY58	125	-	-	
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (*)	$I_C=5.0\text{ mA}, I_E=0$	BDY57	120	-	-	V
			BDY58	160	-	-	
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (*)	$I_E=5.0\text{ A}, I_C=0$	BDY57	-	0.5	1.4	V
			BDY58				
I_{CBO}	Collector-Base Cutoff Current	$V_{CB}=120\text{ V}, I_E=0\text{ V}$	BDY57	-	-	1.0	mA
			BDY58	-	-	0.5	
I_{CER}	Collector-Emitter Cutoff Current	$V_{CE}=80\text{ V}, R_{BE}=10\ \Omega$ $T_{CASE}=100^\circ\text{C}$	BDY57	-	-	10	mA
			BDY58				
I_{EBO}	Emitter-Base Cutoff Current	$V_{EB}=10\text{ V}, I_C=0\text{ V}$	BDY57	-	0.25	0.5	mA
			BDY58				
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=10\text{ A}, I_B=1.0\text{ A}$	BDY57	-	0.5	1.4	V
			BDY58				
h_{21E}	Static Forward Current transfer ratio (*)	$V_{CE}=4\text{ V}, I_C=10\text{ A}$	BDY57	20	-	60	V
			BDY58				
		$V_{CE}=4\text{ V}, I_C=20\text{ A}$	BDY57	-	15	-	
			BDY58				
		$V_{CE}=4\text{ V}, I_C=10\text{ A}$ $T_{CASE}=-30^\circ\text{C}$	BDY57	10	-	-	
			BDY58				
f_T	Transition Frequency	$V_{CE}=15\text{ V}, I_C=1.0\text{ A}$ $f=10\text{ MHz}$	BDY57	10	30	-	MHz
			BDY58				
t_{d+tr}	Turn-on time	$I_C=15\text{ A}, I_B=1.5\text{ A}$	BDY57	-	0.25	1	μs
			BDY58				
t_s+tf	Turn-off time	$I_C=15\text{ A}, I_{B1}=1.5\text{ A}$ $I_{B2}=-1.5\text{ A}$	BDY57	-	1	2	μs
			BDY58				

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

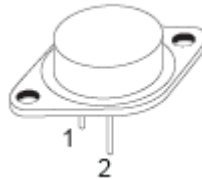
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MECHANICAL DATA CASE TO-3

DIMENSIONS (mm)			
	min	typ	max
A	11	-	13.10
B	0.97	-	1.15
C	1.5	-	1.65
D	8.32	-	8.92
E	19	-	22
G	10.70	-	11.1
N	16.50	-	17.20
P	25	-	27,20
R	3.84	-	4.21
U	38.50	-	40.13
V	29.90	-	30.40



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector



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