



## BDY57 – BDY58

### 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	BDY57	80	V
		BDY58	125	
$V_{CBO}$	Collector-Base Voltage	BDY57	120	V
		BDY58	160	
$V_{EBO}$	Emitter-Base Voltage	BDY57	10	V
		BDY58		
$I_C$	Collector Current	BDY57	25	A
		BDY58		
$I_B$	Base Current	BDY57	6	A
		BDY58		
$P_{TOT}$	Power Dissipation	@ $T_C = 25^\circ$	175	Watts
$T_J$	Junction Temperature	BDY57	-65 to +200	$^\circ\text{C}$
$T_S$	Storage Temperature			

#### THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
$R_{thJ-C}$	Thermal Resistance, Junction to Case	BDY57	1	$^\circ\text{C/W}$
		BDY58		

# BDY57 – BDY58

## ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

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



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Datasheets for electronic components.