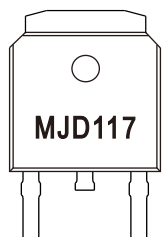
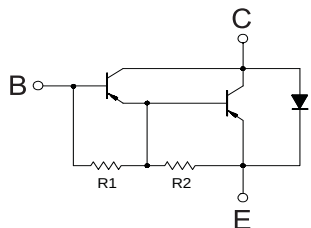


TO-252-2L Plastic-Encapsulate Transistors**MJD117**

DARLINGTON TRANSISTOR (PNP)

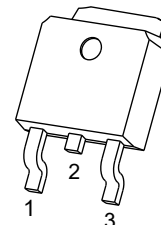
FEATURES

- High DC Current Gain

MARKING**Equivalent Circuit**

TO-252-2L

1. BASE
2. COLLECTOR
3. EMITTER

**MAXIMUM RATINGS** ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

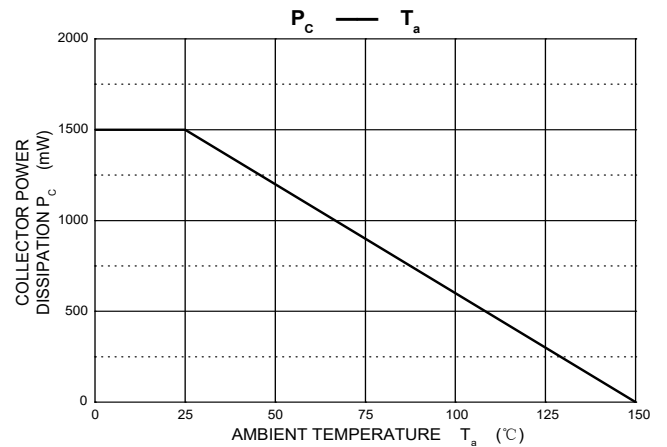
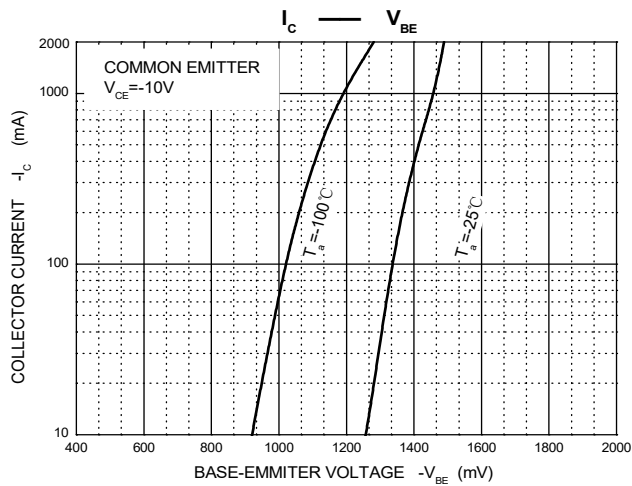
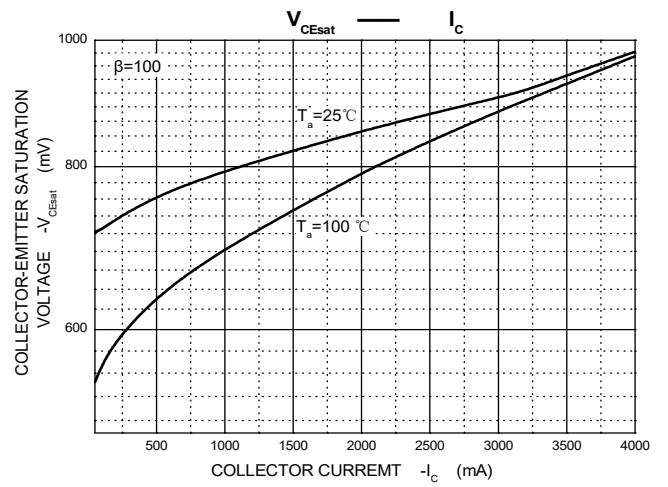
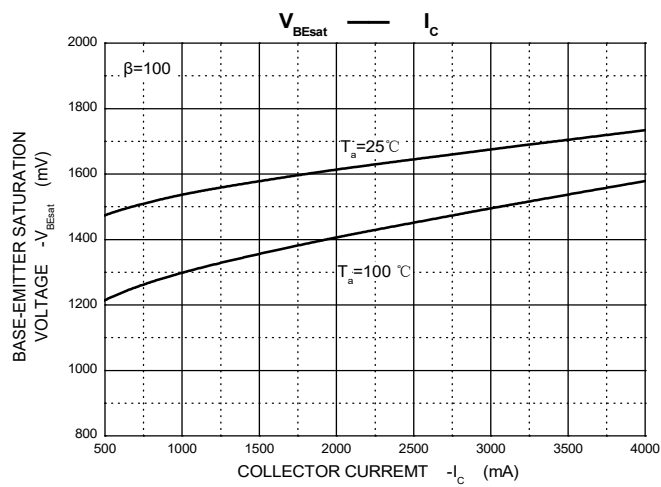
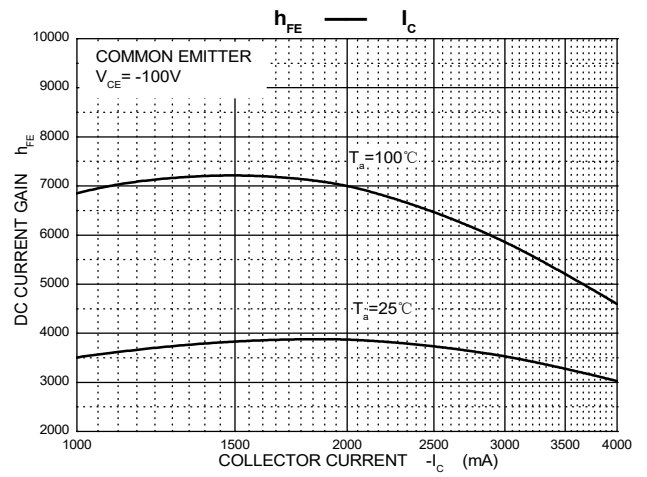
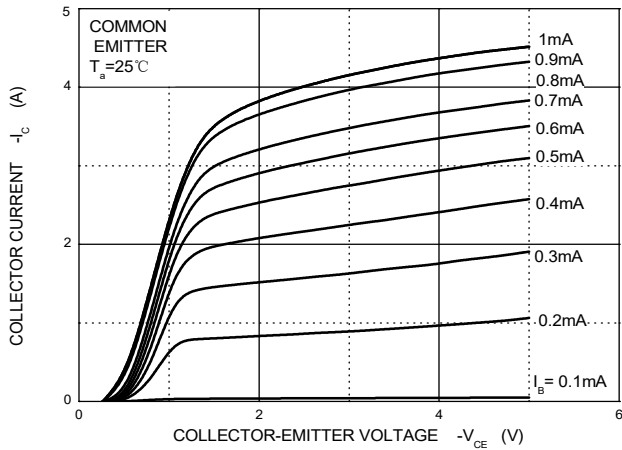
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-100	V
V_{CEO}	Collector-Emitter Voltage	-100	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-2	A
P_C	Collector Power Dissipation	1.5	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	83.3	$^{\circ}\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

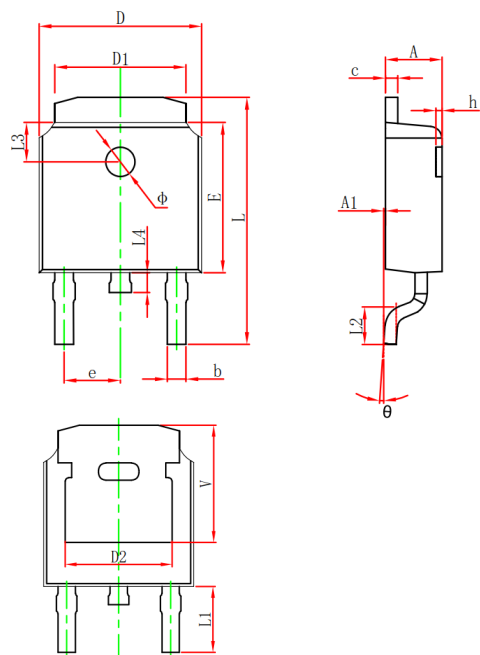
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-1\text{mA}, I_E=0$	-100			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=-30\text{mA}, I_B=0$	-100			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-5\text{mA}, I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-80\text{V}, I_E=0$			-10	μA
Collector cut-off current	I_{CEO}	$V_{CE}=-80\text{V}, I_B=0$			-10	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$			-2	mA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=-3\text{V}, I_C=-0.5\text{A}$	500			
	$h_{FE(2)}^*$	$V_{CE}=-3\text{V}, I_C=-2\text{A}$	1000		12000	
	$h_{FE(3)}^*$	$V_{CE}=-3\text{V}, I_C=-4\text{A}$	200			
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=-2\text{A}, I_B=-8\text{mA}$			-2	V
		$I_C=-4\text{A}, I_B=-40\text{mA}$			-3	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=-4\text{A}, I_B=-40\text{mA}$			-4	V
Base-emitter voltage	V_{BE}^*	$V_{CE}=-3\text{V}, I_C=-2\text{A}$			-2.8	V
Collector output capacitance	C_{ob}	$V_{CB}=-10\text{V}, I_E=0, f=0.1\text{MHz}$			200	pF
Transition frequency	f_T	$V_{CE}=-10\text{V}, I_C=-0.75\text{A}, f=1\text{MHz}$	25			MHz

Typical Characteristics

Static Characteristic

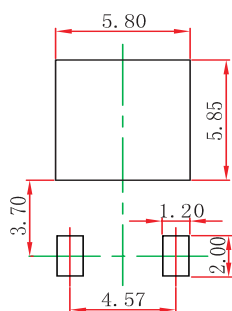


Package Outline Dimensions (TO-252-2L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	

Suggested Pad Layout (TO-252-2L)



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.