

TO-252-2L Plastic-Encapsulate Transistors

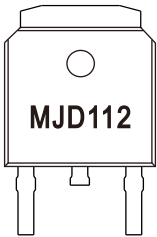
MJD112

DARLINGTON TRANSISTOR (NPN)

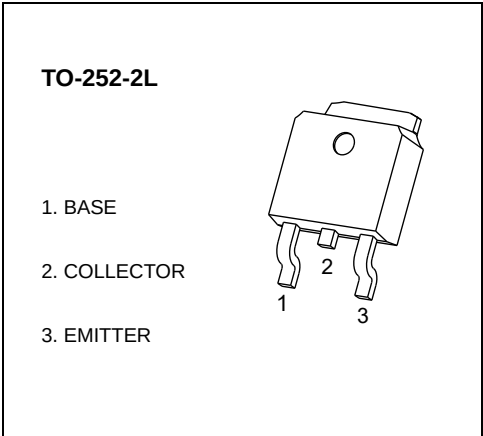
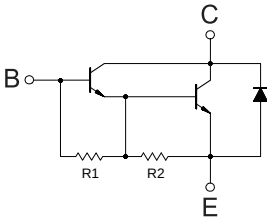
FEATURES

- Complementary Darlington Power Transistors
- Dpak for Surface Mount Applications

MARKING



Equivalent Circuit



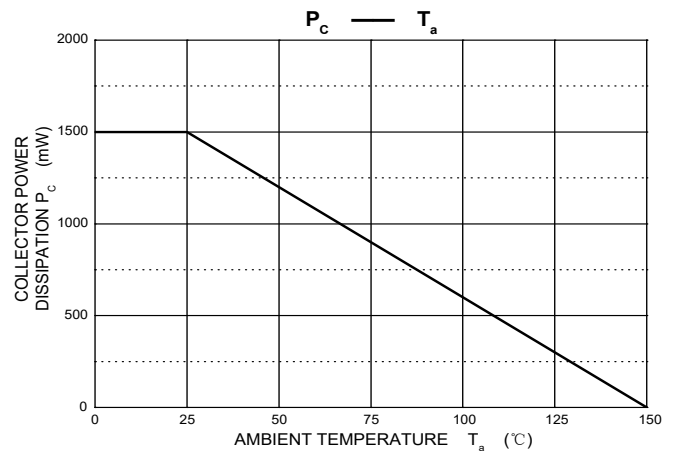
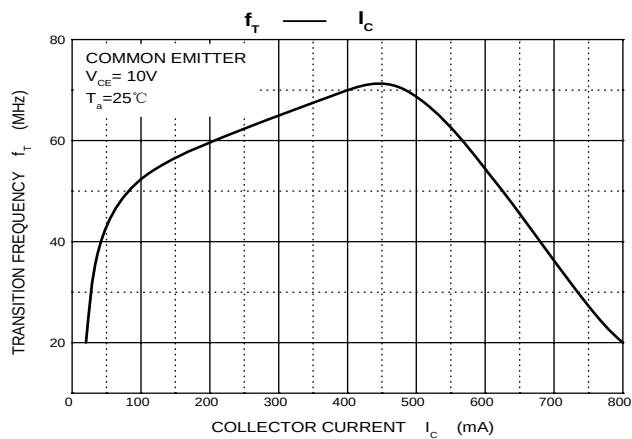
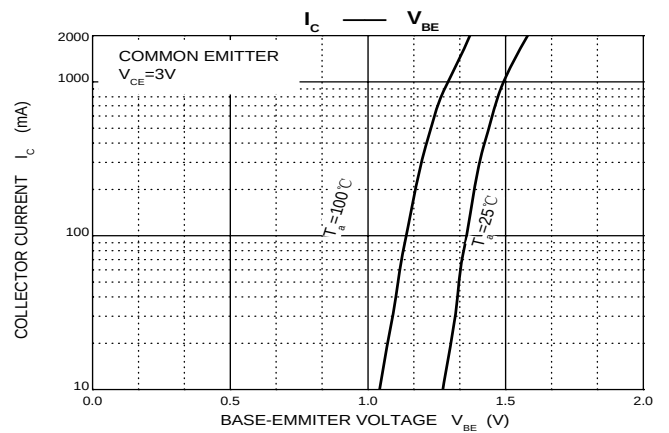
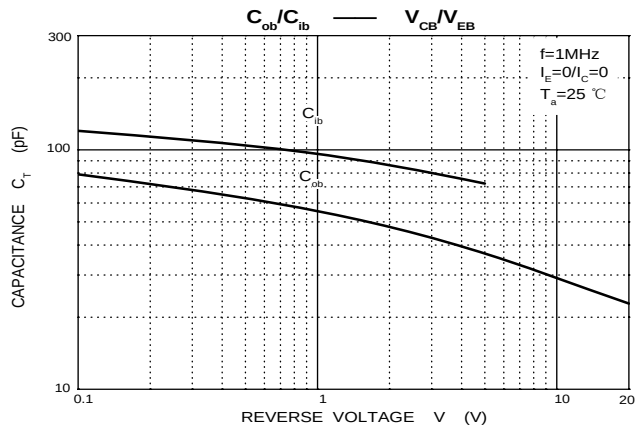
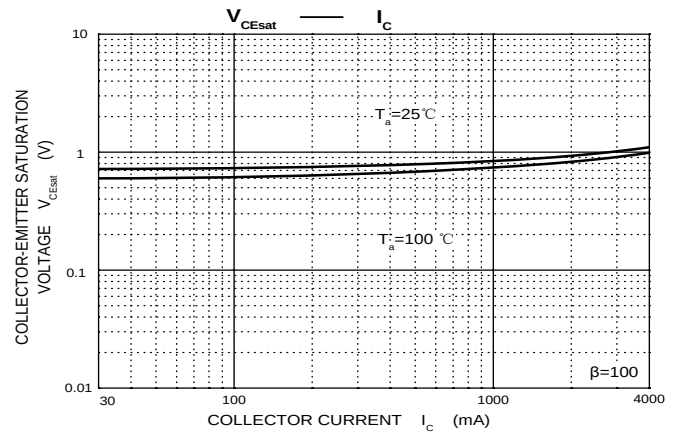
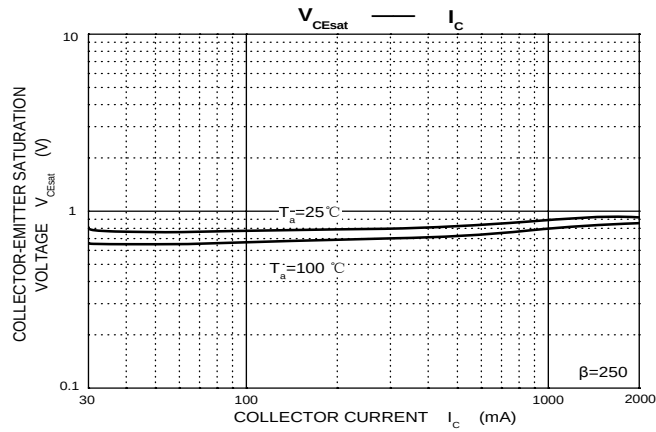
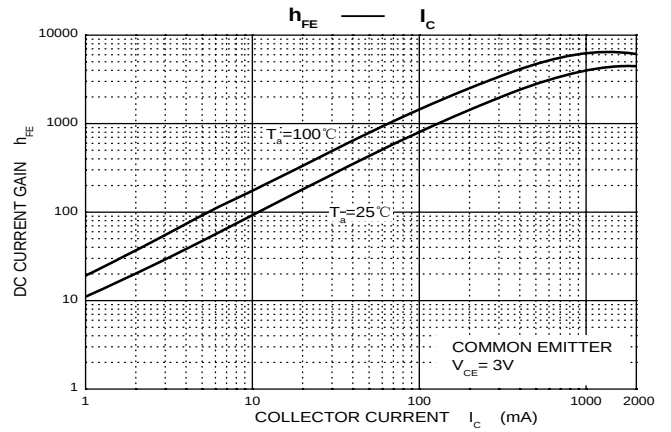
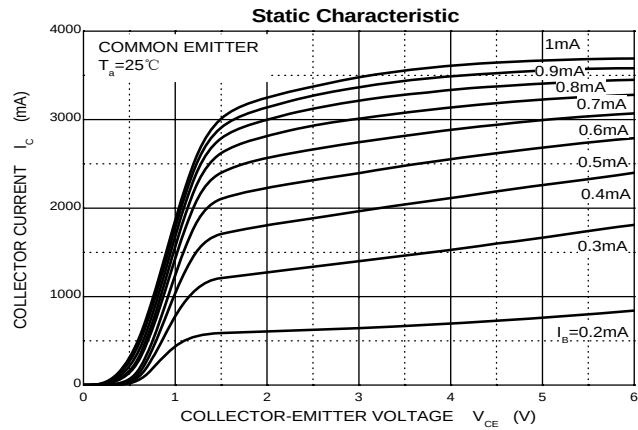
MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

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 -Continuous	2	A
P_C	Collector Power Dissipation	1.5	W
$R_{\theta JC}$	Thermal resistance, junction to case	6.25	°C/W
$R_{\theta JA}$	Thermal resistance, junction to Ambient	83.3	°C/W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55-150	°C

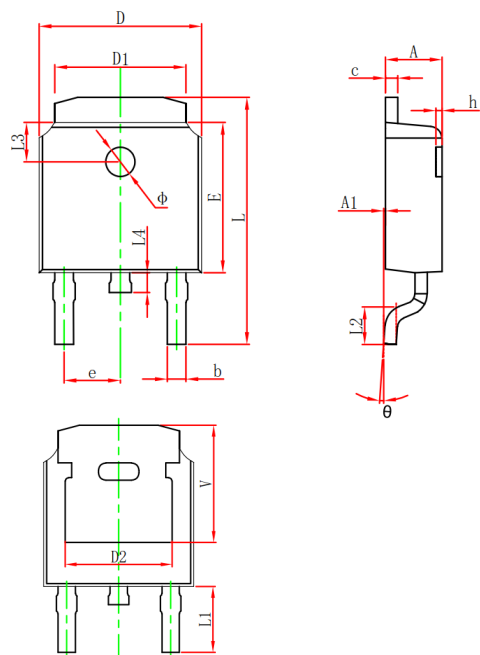
ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	100			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=30mA, I_B=0$	100			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=5mA, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=100V, I_E=0$			20	μA
Collector-emitter cut-off current	I_{CEO}	$V_{CE}=50V, I_E=0$			20	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			2	mA
DC current gain	$h_{FE(1)}$	$V_{CE}=3V, I_C=500mA$	500			
	$h_{FE(2)}$	$V_{CE}=3V, I_C=2A$	1000		12000	
	$h_{FE(3)}$	$V_{CE}=3V, I_C=4A$	200			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=2A, I_B=8mA$			2	V
	$V_{CE(sat)2}$	$I_C=4A, I_B=40mA$			3	V
Base-emitter voltage	V_{BE}	$V_{CE}=3V, I_C=2A$			2.8	V
Transition frequency	f_T	$V_{CE}=10V, I_C=0.75A, f=1MHz$	25			MHz
Collector output capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=0.1MHz$			100	pF

Typical Characteristics

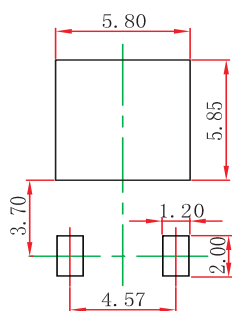


Package Outline Dimensions (TO-252-2L)



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.