

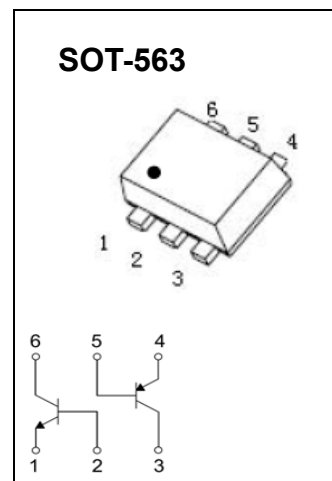
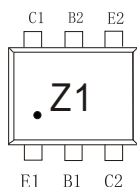
Plastic-Encapsulate Transistors

EMZ1 Dual Transistors (NPN+PNP)

FEATURES

- 2SC2412 and 2SA1037 are housed independently in a package
- Transistor elements independent, eliminating interference
- Mounting cost and area can be cut in half

MARKING: Z1



TR1 NPN and TR2 PNP Absolute Maximum Ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value		Unit
		TR1	TR2	
V_{CBO}	Collector-Base Voltage	60	-60	V
V_{CEO}	Collector-Emitter Voltage	50	-50	V
V_{EBO}	Emitter-Base Voltage	7	-6	V
I_C	Collector Current	150	-150	mA
P_C	Collector Power Dissipation	150(Total)*		mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	833		$^{\circ}\text{C/W}$
T_J	Junction Temperature	150		$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-55~+150		$^{\circ}\text{C}$

*120mW per element must not be exceeded

TR1 NPN ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

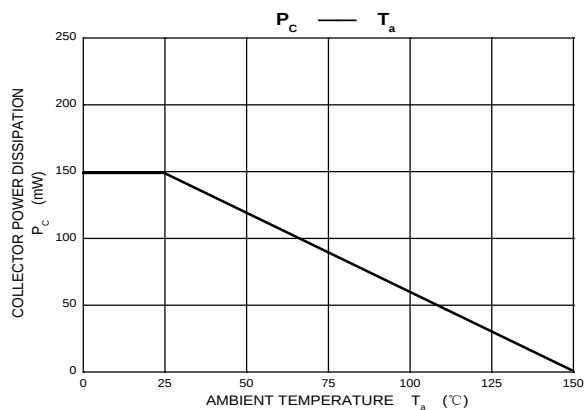
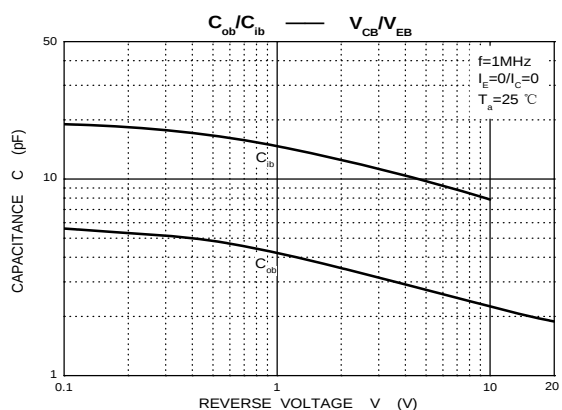
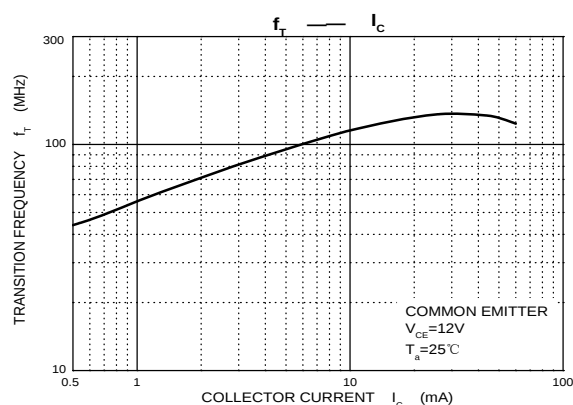
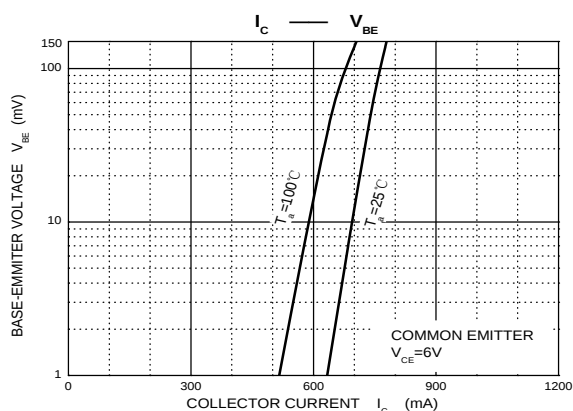
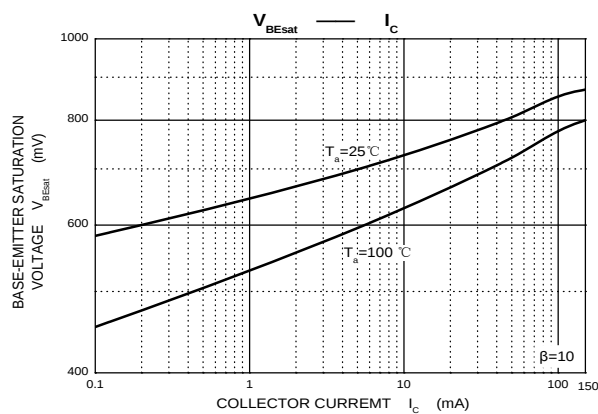
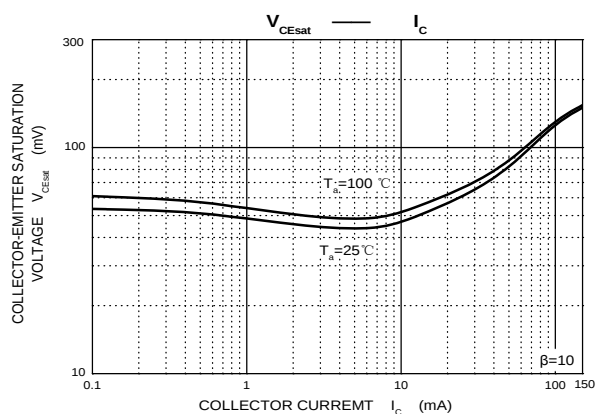
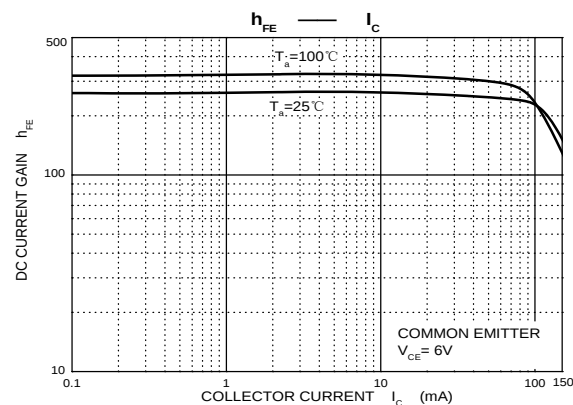
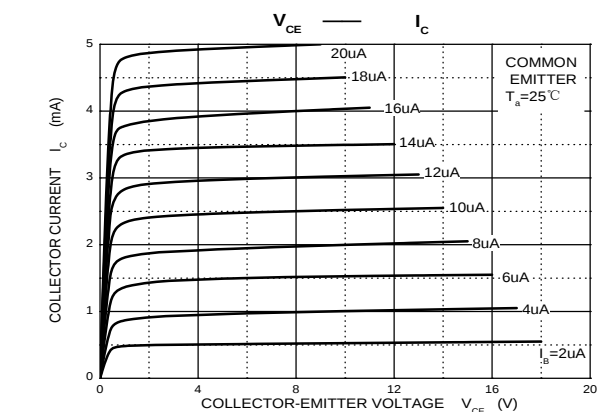
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =50μA, I _E =0	60			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	50			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =50μA, I _C =0	7			V
Collector cut-off current	I _{CBO}	V _{CB} =60V, I _E =0			0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =7V, I _C =0			0.1	μA
DC current gain	h _{FE}	V _{CE} =6V, I _C =1mA	120		560	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =50mA, I _B =5mA			0.4	V
Transition frequency	f _T	V _{CE} =12V, I _C =2mA, f=100MHz		180		MHz
Collector output capacitance	C _{ob}	V _{CB} =12V, I _E =0, f=1MHz			3.5	pF

TR2 PNP ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =-50μA, I _E =0	-60			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =-1mA, I _B =0	-50			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =-50μA, I _C =0	-6			V
Collector cut-off current	I _{CBO}	V _{CB} =-60V, I _E =0			-0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =-6V, I _C =0			-0.1	μA
DC current gain	h _{FE}	V _{CE} =-6V, I _C =-1mA	120		560	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =-50mA, I _B =-5mA			-0.5	V
Transition frequency	f _T	V _{CE} =-12V, I _C =-2mA, f=100MHz		140		MHz
Collector output capacitance	C _{ob}	V _{CB} =-12V, I _E =0, f=1MHz			5	pF

Typical Characteristics

2SC2412



Typical Characteristics

2SA1037

