

# Power management (dual transistors)

## VT6Z2

● **Structure**

Silicon epitaxial planar transistor

● **Features**

Very small package with two transistors.

● **Applications**

Switch, LED driver

● **Packaging specifications**

Type	Package	Taping
	Code	T2R
	Basic ordering unit (pieces)	8000
VT6Z2		○

● **Absolute maximum ratings** (Ta=25°C)

<Tr1> (PNP)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	-50	V
Collector-emitter voltage	V <sub>CEO</sub>	-50	V
Emitter-base voltage	V <sub>EBO</sub>	-5	V
Collector current	I <sub>c</sub>	-100	mA
	I <sub>CP</sub> *1	-200	mA

\*1 Pw=1mS Single pulse

<Tr2> (NPN)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	50	V
Collector-emitter voltage	V <sub>CEO</sub>	50	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>c</sub>	100	mA
	I <sub>CP</sub> *1	200	mA

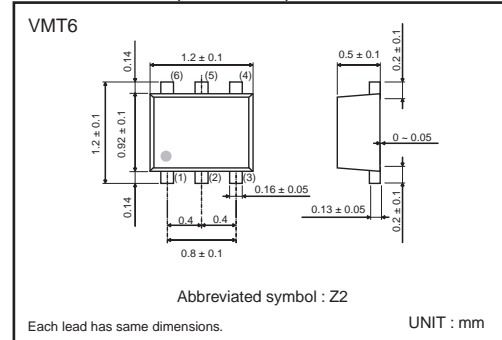
\*1 Pw=1mS Single pulse

<Tr1 and Tr2>

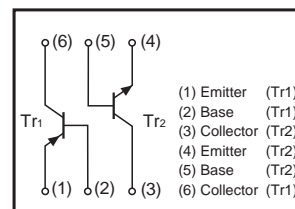
Parameter	Symbol	Limits	Unit	
Power dissipation	Total	P <sub>D</sub> *2	150	mW
	Element		120	mW
Junction temperature	T <sub>j</sub>	150	°C	
Storage temperature	T <sub>stg</sub>	-55 to +150	°C	

\*2 Each terminal mounted on a recommended land

● **Dimensions** (Unit : mm)



● **Inner circuit**



## ●Electrical characteristics (Ta=25°C)

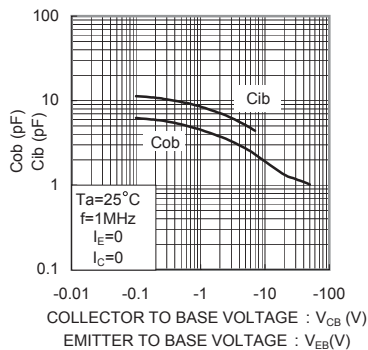
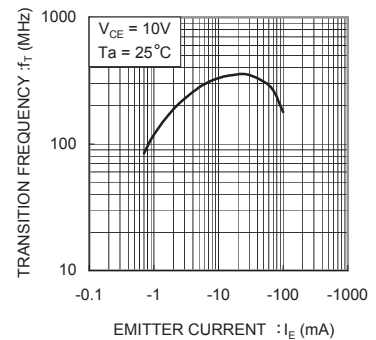
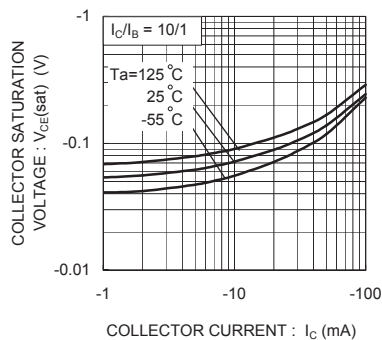
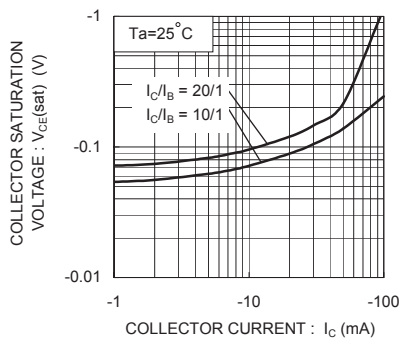
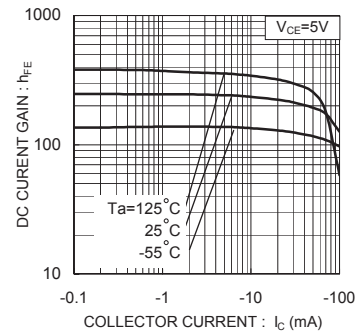
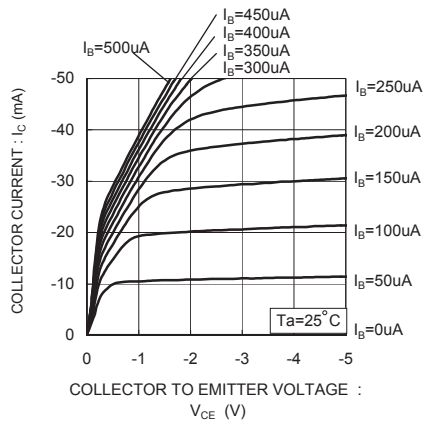
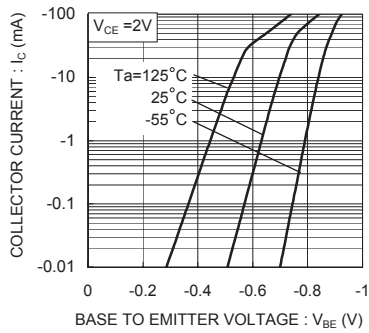
## &lt;Tr1&gt; (PNP)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	$BV_{CEO}$	-50	-	-	V	$I_C = -1\text{mA}$
Collector-base breakdown voltage	$BV_{CBO}$	-50	-	-	V	$I_C = -50\mu\text{A}$
Emitter-base breakdown voltage	$BV_{EBO}$	-5	-	-	V	$I_E = -50\mu\text{A}$
Collector cut-off current	$I_{CBO}$	-	-	-0.1	$\mu\text{A}$	$V_{CB} = -50\text{V}$
Emitter cut-off current	$I_{EBO}$	-	-	-0.1	$\mu\text{A}$	$V_{EB} = -5\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-0.15	-0.40	V	$I_C = -50\text{mA}$ , $I_B = -5\text{mA}$
DC current gain	$h_{FE}$	120	-	560	-	$V_{CE} = -6\text{V}$ , $I_C = -1\text{mA}$
Transition frequency	$f_T$	-	300	-	MHz	$V_{CE} = -10\text{V}$ , $I_E = -10\text{mA}$ , $f = 100\text{MHz}$
Output capacitance	$C_{ob}$	-	2	-	pF	$V_{CB} = -10\text{V}$ , $I_E = 0\text{A}$ , $f = 1\text{MHz}$

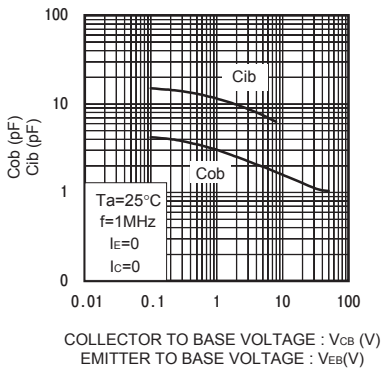
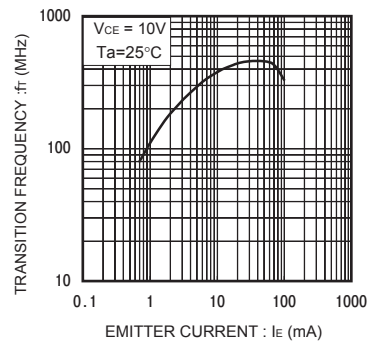
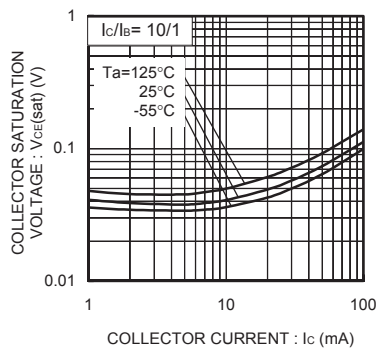
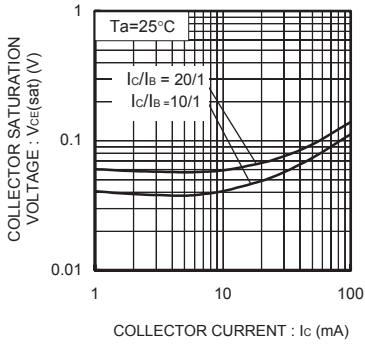
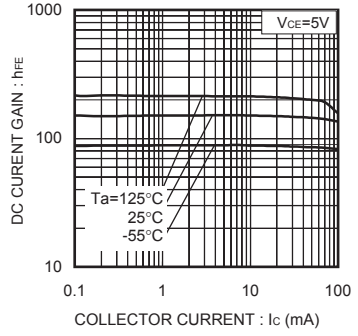
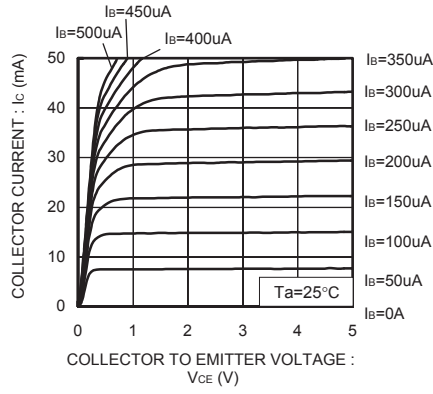
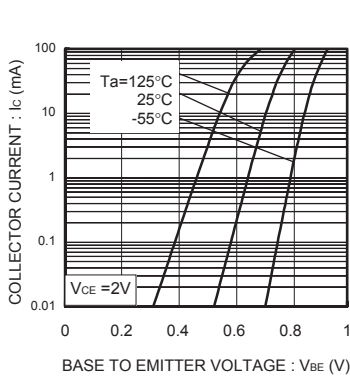
## &lt;Tr2&gt; (NPN)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	$BV_{CEO}$	50	-	-	V	$I_C = 1\text{mA}$
Collector-base breakdown voltage	$BV_{CBO}$	50	-	-	V	$I_C = 50\mu\text{A}$
Emitter-base breakdown voltage	$BV_{EBO}$	5	-	-	V	$I_E = 50\mu\text{A}$
Collector cut-off current	$I_{CBO}$	-	-	0.1	$\mu\text{A}$	$V_{CB} = 50\text{V}$
Emitter cut-off current	$I_{EBO}$	-	-	0.1	$\mu\text{A}$	$V_{EB} = 5\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.10	0.30	V	$I_C = 50\text{mA}$ , $I_B = 5\text{mA}$
DC current gain	$h_{FE}$	120	-	560	-	$V_{CE} = 6\text{V}$ , $I_C = 1\text{mA}$
Transition frequency	$f_T$	-	350	-	MHz	$V_{CE} = 10\text{V}$ , $I_E = -10\text{mA}$ , $f = 100\text{MHz}$
Output capacitance	$C_{ob}$	-	1.6	-	pF	$V_{CB} = 10\text{V}$ , $I_E = 0\text{A}$ , $f = 1\text{MHz}$

●Electrical characteristics curves  
<Tr1> (PNP)



<Tr2> (NPN)



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