

Power management (dual transistors)

VT6Z1

●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
VT6Z1		○

● Absolute maximum ratings (Ta=25°C)

<Tr1> (PNP)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	-20	V
Collector-emitter voltage	V _{CEO}	-20	V
Emitter-base voltage	V _{EBO}	-5	V
Collector current	I _c	-200	mA
	I _{CP} *1	-400	mA

*1 Pw=1mS Single pulse

<Tr2> (NPN)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	20	V
Collector-emitter voltage	V _{CEO}	20	V
Emitter-base voltage	V _{EBO}	5	V
Collector current	I _c	200	mA
	I _{CP} *1	400	mA

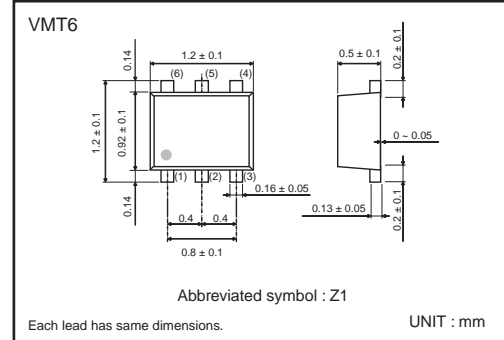
*1 Pw=1mS Single pulse

<Tr1 and Tr2>

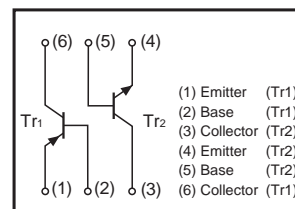
Parameter	Symbol	Limits	Unit	
Power dissipation	Total	P _D *2	150	mW
	Element		120	mW
Junction temperature	T _j	150	°C	
Storage temperature	T _{stg}	-55 to +150	°C	

*2 Each terminal mounted on a recommended land

●Dimensions (Unit : mm)



●Inner circuit



●Electrical characteristics (Ta=25°C)

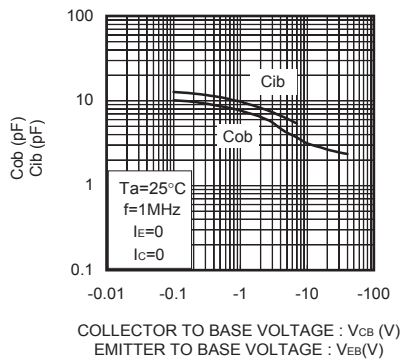
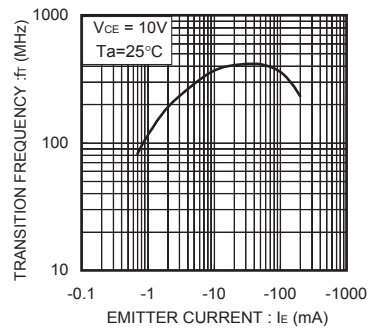
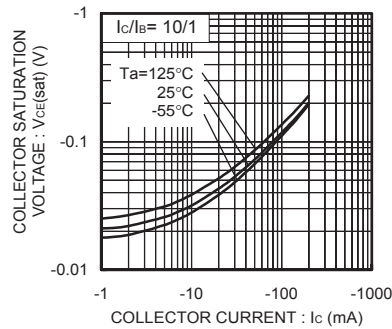
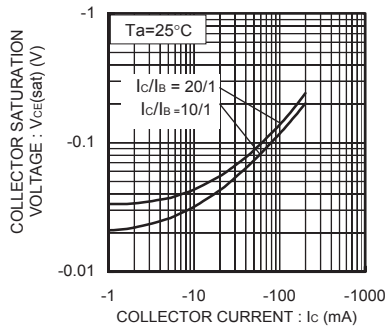
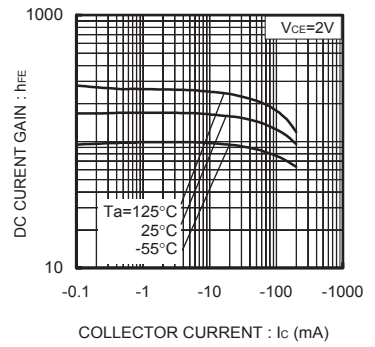
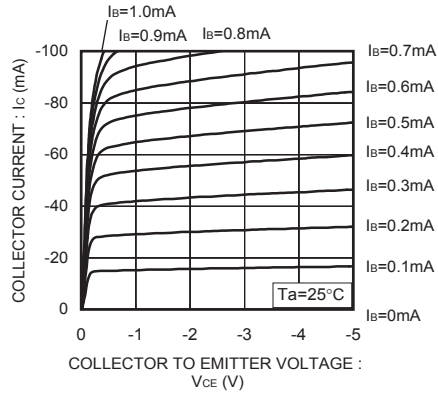
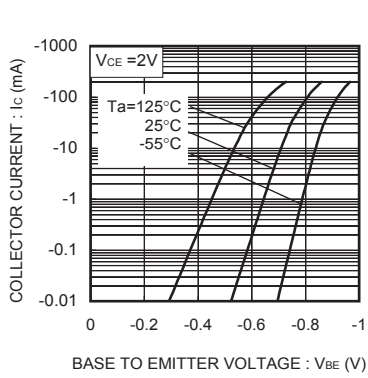
<Tr1> (PNP)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	-20	-	-	V	$I_C = -1\text{mA}$
Collector-base breakdown voltage	BV_{CBO}	-20	-	-	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	μA	$V_{CB} = -20\text{V}$
Emitter cut-off current	I_{EBO}	-	-	-0.1	μA	$V_{EB} = -5\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-0.12	-0.30	V	$I_C = -100\text{mA}$, $I_B = -10\text{mA}$
DC current gain	h_{FE}	120	-	560	-	$V_{CE} = -2\text{V}$, $I_C = -1\text{mA}$
Transition frequency	f_T	-	350	-	MHz	$V_{CE} = -10\text{V}$, $I_E = 10\text{mA}$, $f = 100\text{MHz}$
Output capacitance	C_{ob}	-	3	-	pF	$V_{CB} = -10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$

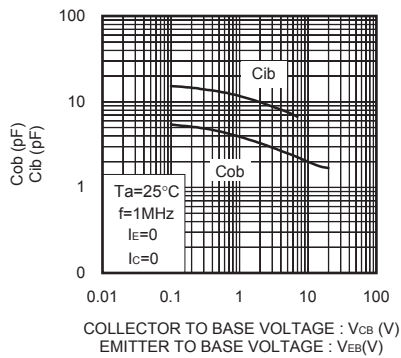
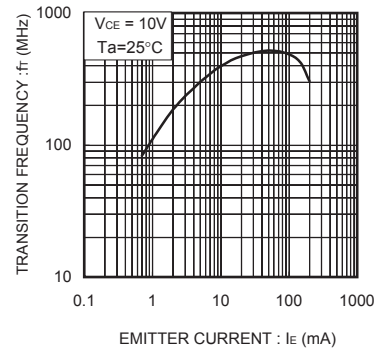
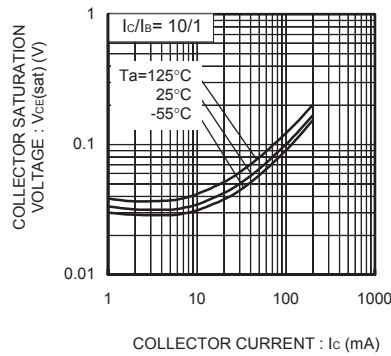
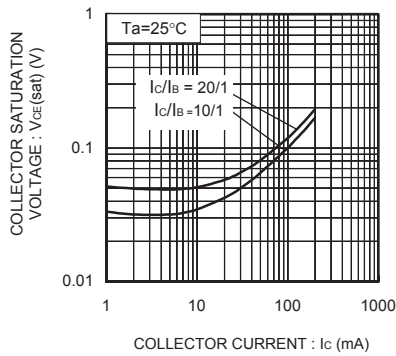
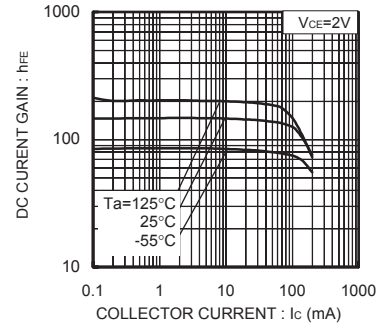
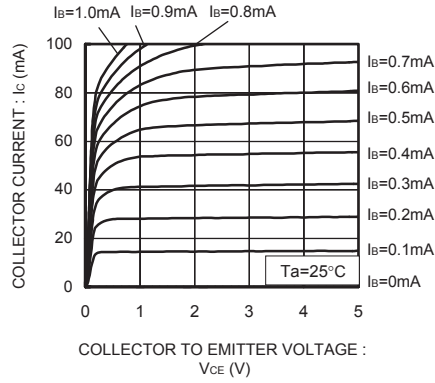
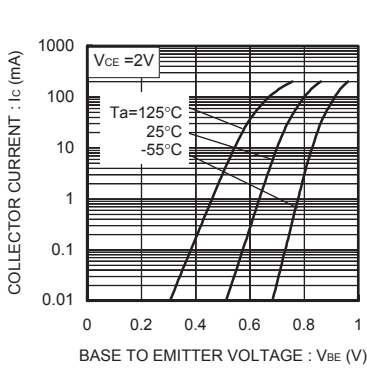
<Tr2> (NPN)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	20	-	-	V	$I_C = 1\text{mA}$
Collector-base breakdown voltage	BV_{CBO}	20	-	-	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	μA	$V_{CB} = 20\text{V}$
Emitter cut-off current	I_{EBO}	-	-	0.1	μA	$V_{EB} = 5\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.12	0.30	V	$I_C = 100\text{mA}$, $I_B = 10\text{mA}$
DC current gain	h_{FE}	120	-	560	-	$V_{CE} = 2\text{V}$, $I_C = 1\text{mA}$
Transition frequency	f_T	-	400	-	MHz	$V_{CE} = 10\text{V}$, $I_E = -10\text{mA}$, $f = 100\text{MHz}$
Output capacitance	C_{ob}	-	2	-	pF	$V_{CB} = 10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$

●Electrical characteristics curves
<Tr1> (PNP)



<Tr2> (NPN)



Notes

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