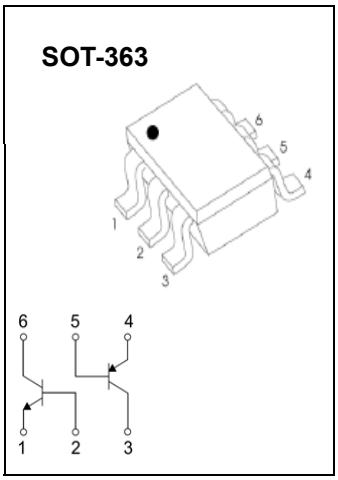
Power management Dual-transistors

DUAL TRANSISTOR (NPN+PNP)



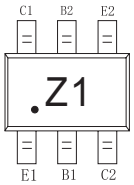
DESCRIPTION

Silicon epitaxial planar transistor

FEATURES

- 2SA1037AK and 2SC2412K are housed independently in a package
- Transistor elements independent, eliminating interference
- Mounting cost and area can be cut in half

MARKING: Z1



TR1 MAXIMUM RATINGS T_a=25℃ unless otherwise noted

Symbol	Parameter	Value	Unit
V_{CBO}	Collector- Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current -Continuous	0.15	A
P_C	Collector Power Dissipation	0.15	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

TR2 MAXIMUM RATINGS T_a=25℃ unless otherwise noted

Symbol	Parameter	Value	Unit
V_{CBO}	Collector- Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current -Continuous	-0.15	A
P_C	Collector Power Dissipation	0.15	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

TR1 NPN ELECTRICAL CHARACTERISTICS (Ta=25℃ 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		2.0	3.5	pF

TR1 PNP ELECTRICAL CHARACTERISTICS (Ta=25℃ 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