

Power management Dual-transistors

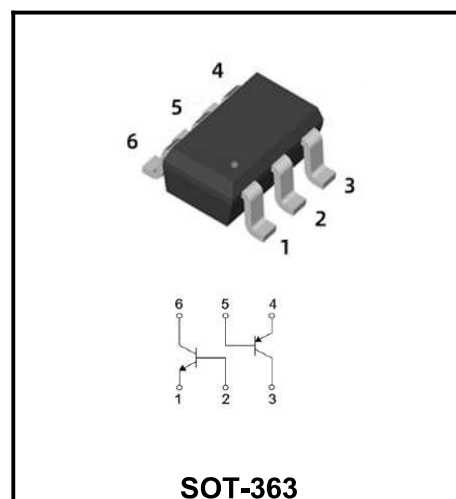
DUAL TRANSISTOR (NPN+PNP)

DESCRIPTION

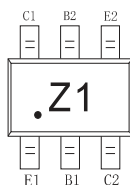
Silicon epitaxial planar transistor

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 Code	
UMZ1N	Z1



TR1 MAXIMUM RATINGS Ta=25°C 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	°C

TR2 MAXIMUM RATINGS Ta=25°C 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	°C

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=50\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=50\mu A, I_C=0$	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°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-50\mu A, I_E=0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1mA, I_B=0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-50\mu A, I_C=0$	-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

Ordering information

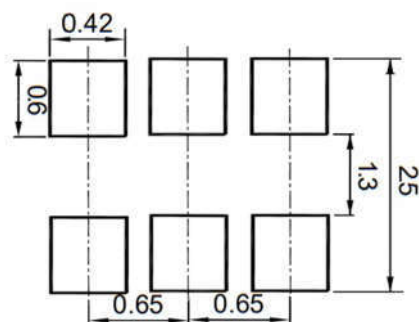
Package	Packing Description	Packing Quantity
SOT-363	Tape/Reel, 7" reel	3000PCS/Reel 120000PCS/Carton

Package Dimensions

SOT-363

Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	0.8	1.1	32	43
A1	-	0.1	-	3.94
bp	0.20	0.30	7.87	11.81
c	0.10	0.25	3.94	9.84
D	1.8	2.2	70.87	86.61
E	1.15	1.35	45.28	53.15
e	1.3		51.18	
e1	0.65		25.6	
HE	2.0	2.2	78.74	86.6
Lp	0.15	0.45	5.90	17.71
Q	0.15	0.25	5.90	9.84
v	0.2		7.78	
w	0.2		7.78	
y	0.1		3.94	

The recommended mounting pad size



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