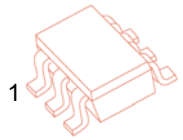
Power management (dual transistors)

DESCRIPTION
Silicon epitaxial planar transistor

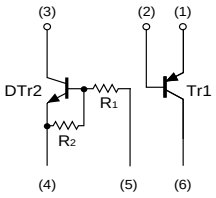
FEATURES
- 2SA2018 and DTC114E are housed independently in a package.
- Power switching circuit in a single package.
- Mounting cost and area can be cut in half.

APPLICATION
Power management circuit, mobile telephone quiver circuit
For portable equipment:(i.e. Mobile phone,MP3, MD,CD-ROM, DVD-ROM, Note book PC, etc.)

SOT-363



Equivalent Circuit



MARKING:F21

TR1 MAXIMUM RATINGS T_a=25℃ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector- Base Voltage	-15	V
V_{CEO}	Collector-Emitter Voltage	-12	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current -Continuous	-0.5	A
P_C	Collector Dissipation	0.15	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃

DTR2 Absolute maximum ratings(Ta=25℃)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-10~40	V
Output current	I_O	50	mA
	$I_{C(MAX)}$	100	
Power dissipation	Pd	150	mW
Junction temperature	Tj	150	℃
Storage temperature	Tstg	-55~150	℃

TR1 ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-10μA, I_E=0	-15			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA, I_B=0	-12			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-10μA, I_C=0	-6			V
Collector cut-off current	I_{CBO}	V_{CB}= -15 V, 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}=-2V, I_C=-10mA	270		680	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-200mA,I_B=-10mA			-0.25	V
Transition frequency	f_T	V_{CE}=-2V,I_C=-10mA, f=100MHz		260		MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V,I_E=0,f=1MHz		6.5		pF

DTR2 Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$			0.5	V	V_{CC}=5V ,I_O=100μA
	$V_{I(on)}$	3				V_O=0.3V ,I_O=10 mA
Output voltage	$V_{O(on)}$			0.3	V	I_O/I_I=10mA/0.5mA
Input current	I_I			0.88	mA	V_I=5V
Output current	$I_{O(off)}$			0.5	μA	V_{CC}=50V, V_I=0
DC current gain	G_I	30				V_O=5V ,I_O=5mA
Input resistance	R_1	7	10	13	KΩ	
Resistance ratio	R_2/R_1	0.8	1	1.2		
Transition frequency	f_T		250		MHz	V_{CE}=10V ,I_E=-5mA,f=100MHz