# Medium power transistor (30V, 0.5A) 2SC5729

#### Features

- 1) High speed switching. (Tf: Typ.: 50ns at Ic = 500 mA)
- 2) Low saturation voltage, typically

(Typ.: 150mV at Ic = 100mA, IB = 10mA)

- 3) Strong discharge power for inductive load and capacitance load.
- 4) Complements the 2SA2047

# Applications

Small signal low frequency amplifier High speed switching

#### Structure

NPN Silicon epitaxial planar transistor

## Packaging specifications

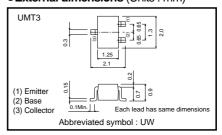
Туре	Package	Taping		
	Code	T106		
	Basic ordering unit (pieces)	3000		
2SC5729		0		

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	Vсво	30	V
Collector-emitter voltage	Vceo	30	V
Emitter-base voltage	VEBO	6	V
Collector current	Ic	0.5	Α
Collector current	ICP	1.0	A *1
Power dissipation	Pc	200	mW *2
Junction temperrature	Tj	150	°C
Range of storage temperature	Tstg	-55 to +150	°C

<sup>\*1</sup> Pw=10ms

## ●External dimensions (Units : mm)



<sup>\*2</sup> Each terminal mounted on a recommended land.

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

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	BVceo	30	-	-	V	Ic=100μA
Collector-emitter breakdown voltage	ВУсво	30	_	_	V	Ic=1mA
Emitter-base breakdown voltage	ВУево	6	-	-	V	I <sub>E</sub> =100μA
Collector cut-off current	Ісво	_	-	1.0	μΑ	Vcb=20V
Emitter cut-off current	ІЕВО	-	-	1.0	μΑ	V <sub>EB</sub> =4V
Collector-emitter staturation voltage	VCE(sat)	_	150	300	mV	Ic=100mA, I <sub>B</sub> =10mA
DC current gain	hfe	120	-	390	_	VcE=2V, Ic=50mA
Transition frequency	fT	_	300	-	MHz	VcE=10V, IE= -100mA, f=10MHz
Collector output capacitance	Cob	_	5	-	pF	Vcb=10V, IE=0A, f=1MHz
Turn-on time	Ton	_	40	_	ns	Ic=500mA
Storage time	Tstg	_	120	-	ns	Ів1=50mA   Ів2= –50mA
Fall time	Tf	_	50	-	ns	Vcc≃25V

#### ●hfe RANK

Q	R		
120-270	180-390		

### •Electrical characteristic curves

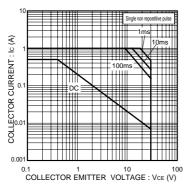


Fig.1 Safe operating area

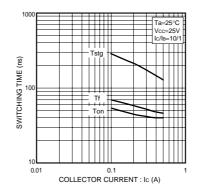


Fig.2 Switching Time

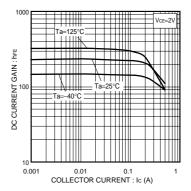


Fig.3 DC current gain vs. collector

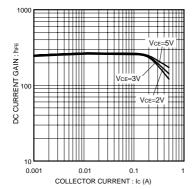


Fig.4 DC current gain vs. collector current

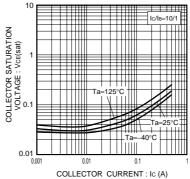


Fig.5 Collector-emitter saturation voltage vs. collector current

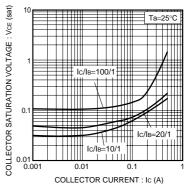


Fig.6 Collector-emitter saturation voltage vs. collector current

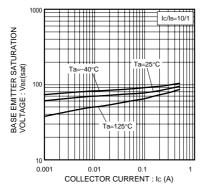


Fig.7 Base-emitter saturation voltage vs. collector current

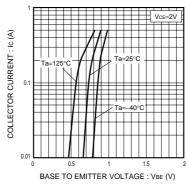


Fig.8 Ground emitter propagation characteristics

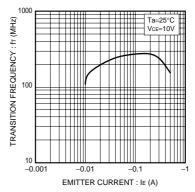


Fig.9 Transition frequency

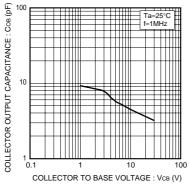
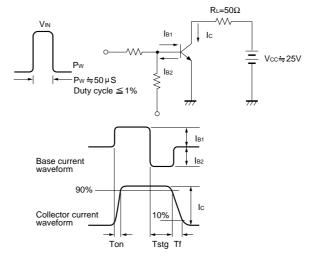


Fig.10 Collector output capacitance

## •Switching characteristics measurement circuits



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