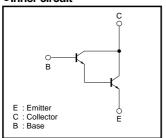
High-gain Amplifier Transistor (30V, 0.3A) **2SD2142K**

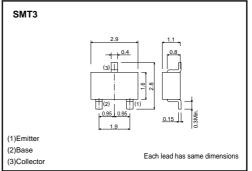
●Features

- 1) Darlington connection for a high hea. (DC current gain = 5000 (Min.) at Vce = 3V, Ic = 10mA)
- 2) High input impedance.

●Inner circuit



●Dimensions (Unit:mm)



● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	Vсво	30	V
Collector-emitter voltage	Vcer	30	V
Emitter-base voltage	VEBO	10	V
Collector current	lc	0.3	A
Collector power dissipation	Pc	0.2	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

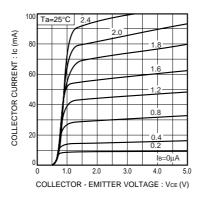
●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	30	-	-	V	Ic=10μA
Collector-emitter breakdown voltage	BVces	30	-	-	V	Ic=100mA
Emitter-base breakdown voltage	ВУЕВО	10	-	-	V	Iε=10μA
Collector cutoff current	Ісво	-	-	0.1	μΑ	Vcb=30V
Emitter cutoff current	Ієво	-	-	0.1	μΑ	V _{EB} =10V
DC current transfer ratio	h _{FE1}	5000	-	-	-	VcE/Ic=5V/10mA
	hFE2	10000	-	-	-	VcE/Ic=5V/100mA
Collector-emitter saturation voltage	VcE(sat)	-	-	1.5	V	Ic/I _B =100mA/0.1mA
Base-emitter voltage	V _{BE(on)}	-	-	2	V	Vce/lc=5V/100mA
Transition frequency	f⊤	-	200	-	MHz	Vce=5V , Ie=-10mA , f=100MHz *
Output capacitance	Cob	-	5.4	-	pF	Vcb=10V , Ie=0A , f=1MHz

^{*} Transition frequency of the device.

●Packaging specifications and hFE

Туре	2SD2142K
Package	SMT3
hre	5k~
Code	T146
Basic ordering unit (pieces)	3000



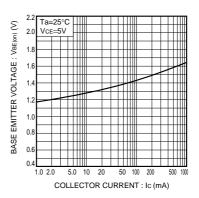
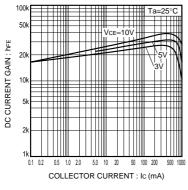
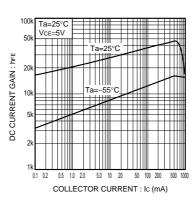


Fig.1 Typical output characteristics (I)

Fig.2 Typical output characteristics (II)

Fig.3 Base emitter 'ON' voltage vs. collector current





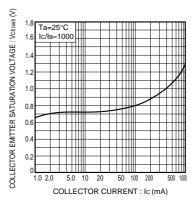
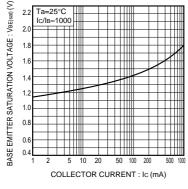
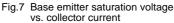


Fig.4 DC current gain vs. collector current (I) Fig.5 DC current gain vs. collector current (II)

Fig.6 Collector emitter saturation voltage vs. collector current





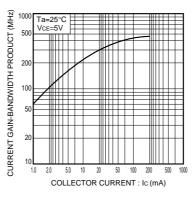


Fig.8 Current gain-bandwidth product vs. collector current

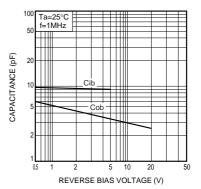


Fig.9 Capacitance vs. reverse bias voltage



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