

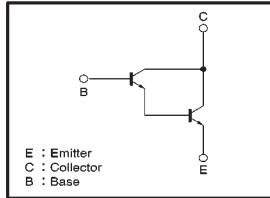
High-gain Amplifier Transistor (32V, 0.3A)

2SD2142K / 2SC2062S

●Features

- 1) Darlington connection for a high h_{FE} .
(DC current gain=5000 (Min.) at $V_{CE}=3V$, $I_C=0.1A$)
- 2) High input impedance.

●Circuit diagram



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	32	V
Emitter-base voltage	V_{EB0}	12	V
Collector current	I_C	0.3	A
Collector power dissipation	Pc	0.2	W
		0.3	
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55~+150	°C

●Packaging specifications and h_{FE}

Type	2SD2142K	2SC2062S
Package	SMT3	SPT
h_{FE}	5k~	C
Code	T146	TP
Basic ordering unit (pieces)	3000	5000

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	40	—	—	V	$I_C=100\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	32	—	—	V	$I_C=10mA$
Emitter-base breakdown voltage	BV_{EB0}	12	—	—	V	$I_E=100\mu A$
Collector cutoff current	I_{CBO}	—	—	0.1	μA	$V_{CB}=30V$
Emitter cutoff current	I_{EBO}	—	—	0.1	μA	$V_{EB}=12V$
DC current transfer ratio	2SD2142K	h_{FE}	5000	—	—	$V_{CE}/I_C=3V/0.1A$
	2SC2062S	h_{FE}	10000	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1.4	V	$I_C/I_E=200mA/0.2mA$
Transition frequency	f_T	—	200	—	MHz	$V_{CE}=5V$, $I_E=-10mA$, $f=100MHz$ *
Output capacitance	C_{ob}	—	2.5	—	pF	$V_{CB}=10V$, $I_E=0A$, $f=1MHz$

* Transition frequency of the device.

(94L-570-D25)

Low $V_{CE(sat)}$ Transistor (Strobes and DC/DC converters) (10V, 5A)

2SD2470

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)}=0.25V$ at $I_C/I_E=3A/0.1A$.
- 2) Collector current of 5A is possible.

●Packaging specifications and h_{FE}

Type	2SD2470
Package	SPT
h_{FE}	270~820
Code	TP
Basic ordering unit (pieces)	5000

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	15	V
Collector-emitter voltage	V_{CEO}	10	V
Emitter-base voltage	V_{EB0}	10	V
Collector current	I_C	5	A (DC)
	I_{CP}	8	A (Pulse) *
Collector power dissipation	Pc	0.4	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55~+150	°C

* Single pulse=10ms

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	10	—	—	V	$I_C=1mA$
Collector-emitter breakdown voltage	BV_{CEO}	15	—	—	V	$I_C=50\mu A$
Emitter-base breakdown voltage	BV_{EB0}	10	—	—	V	$I_E=50\mu A$
Collector cutoff current	I_{CBO}	—	—	0.1	μA	$V_{CB}=10V$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB}=8V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.25	0.5	V	$I_C/I_E=3/0.1A$
DC current transfer ratio	h_{FE}	270	—	820	—	$V_{CE}=2V$, $I_C=2A$
Transition frequency	f_T	—	170	—	MHz	$V_{CE}=6V$, $I_E=0.05A$, $f=100MHz$
Output capacitance	C_{ob}	—	30	—	pF	$V_{CB}=10V$, $I_E=0A$, $f=1MHz$

(SPEC-D230)