Chroma Amplifier Transistor (300V, 0.1A)

2SC4061K / 2SC3415S / 2SC4015 / 2SC3271F

●**Features**

1) High breakdown voltage. (BV_{CEO}=300V)
2) Low collector output capacitance, typically 3pF at V_{CB}=30V.
3) Ideal for chroma circuit.

●**Packaging specifications and h_{FE}**

Type	2SC4061K	2SC3415S	2SC4015	2SC3271F
Package	SMT3	SPT	ATV	TO−126F
h_{FE}	NP	NP	N	N
Marking	AN*	—	—	—
Code	T146	TP	TV2	—
Basic ordering unit (pieces)	3000	5000	2500	1000

* Denotes h_{FE}

●**Absolute maximum ratings** (Ta=25℃)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	300	V
Collector-emitter voltage		V_{CEO}	300	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	100	mA
Collector power dissipation	2SC4061K	P_C	0.2	W
	2SC3415S		0.3	
	2SC4015		1 *	
	2SC3271F		1.2	
			5	W (Tc=25℃)
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55～+150	℃

* When t = 1.7mm and the foil collector area on the PC board is 100mm² or greater.

●**Electrical characteristics** (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	300	—	—	V	I_C=50μA
Collector-emitter breakdown voltage		BV_{CEO}	300	—	—	V	I_C=100μA
Emitter-base breakdown voltage		BV_{EBO}	5	—	—	V	I_E=50μA
Collector cutoff current		I_{CBO}	—	—	0.5	μA	V_{CB}=200V
Emitter cutoff current		I_{EBO}	—	—	0.5	μA	V_{EB}=4V
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	—	2	V	I_C/I_B=50mA/5mA
DC current transfer ratio	2SC4061K, 2SC3415S	h_{FE}	56	—	180	—	V_{CE}/I_C=10V/10mA
	2SC4015, 2SC3271F		56	—	120	—	
Gain bandwidth product		f_T	50	100	—	MHz	V_{CE}=30V, I_E=−10mA, f=100MHz
Collector output capacitance		Cob	—	3	—	pF	V_{CB}=30V, I_E=0A, f=1MHz

(96-172-C52)

High-voltage Switching Transistor (400V, 5A)

2SC4938 / 2SC4129

●**Features**

1) Low saturation voltage, typically $V_{CE(sat)}$ =0.6V at I_C / I_B=5A / 1A.
2) High switching speed, typically tf=1μs at I_C=4A.
3) Wide SOA (safe operating area).

●**Packaging specifications and h_{FE}**

Type	2SC4938	2SC4129
Package	PSD3	TO−220FP
h_{FE}	B	AB
Code	TL	—
Basic ordering unit (pieces)	1000	500

●**Absolute maximum ratings** (Ta=25℃)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	400	V
Collector-emitter voltage		V_{CEO}	400	V
Emitter-base voltage		V_{EBO}	7	V
Collector current		I_C	5	A
		I_{CP}	7	A *
Collector power dissipation	2SC4938	P_C	1.5	W
			35	W (Tc=25℃)
	2SC4129		30	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55～+150	℃

* Single pulse, Pw=100ms.

●**Electrical characteristics** (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	400	—	—	V	I_C=50μA
Collector-emitter breakdown voltage		BV_{CEO}	400	—	—	V	I_C=1mA
Emitter-base breakdown voltage		BV_{EBO}	7	—	—	V	I_E=50μA
Collector cutoff current		I_{CBO}	—	—	10	μA	V_{CB}=400V
Emitter cutoff current		I_{EBO}	—	—	10	μA	V_{EB}=5V
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	—	1	V	I_C/I_B=5A/1A *
Base-emitter saturation voltage		$V_{BE(sat)}$	—	—	1.5	V	I_C/I_B=5A/1A *
DC current transfer ratio	2SC4938	h_{FE}	25	—	50	—	V_{CE}/I_C=5V/2A
	2SC4129		16	—	50	—	
Transition frequency		f_T	—	15	—	MHz	V_{CB}=10V, I_E=−0.5A, f=5MHz *
Output capacitance		Cob	—	80	—	pF	V_{CB}=10V, I_E=0A, f=1MHz
Turn-on time		t_{on}	—	—	1	μs	I_C=4A, R_L=50Ω
Storage time		t_{stg}	—	—	2.5	μs	I_{B1}=−I_{B2}=0.4A
Fall time		t_f	—	—	1	μs	V_{CC}≃200V

* Measured using pulse current.

(96-188-C55)