

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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### VERTICAL DEFLECTION OUTPUT FOR COLOR TV

### PNP/NPN SILICON TRIPLE DIFFUSED TRANSISTORS

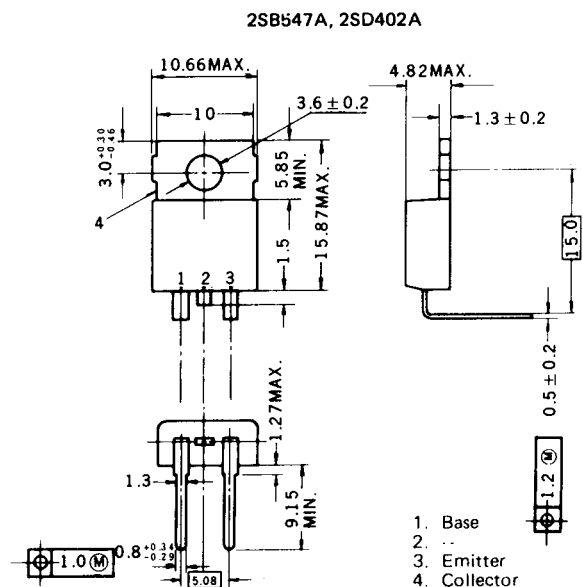
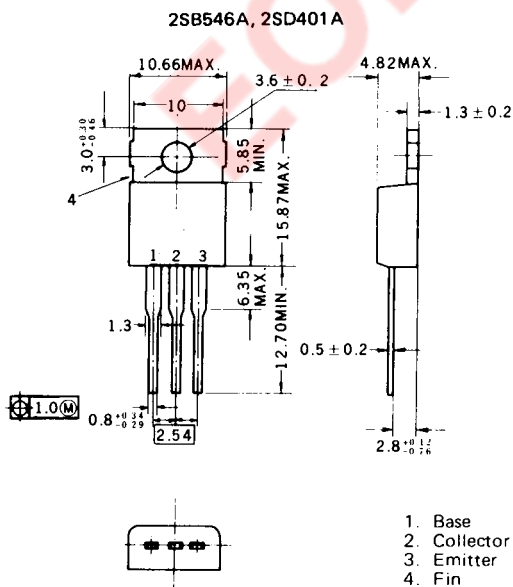
#### DESCRIPTION

The 2SB546A (PNP), 2SD401A (NPN), 2SB547A (PNP), and 2SD402A (NPN) are high voltage triple diffused silicon transistors. These devices are designed for use in line-operated color TV vertical deflection of complementary symmetry circuit. 2SB546A and 2SD401A are complementary transistors, consisting of straight leads. 2SB547A and 2SD402A consist of emitter and base leads for insertion into TO-66 sockets.

QUICK REFERENCE DATA					
			2SB546A, 2SB547A	2SD401A, 2SD402A	
Collector-emitter voltage (open base)	$V_{CEO}$	MAX.	150	150	V
Collector current (peak value)	$I_{CM}$	MAX.	3	3	A
Total power dissipation up to $T_{case} = 25^{\circ}C$	$P_{tot}$	MAX.	30	30	W
D.C. Current gain	$h_{FE}$	MIN.	40	40	
$I_C = -0.4/0.4A, V_{CE} = -10/10V$					

#### MECHANICAL DATA

(Dimensions in mm)

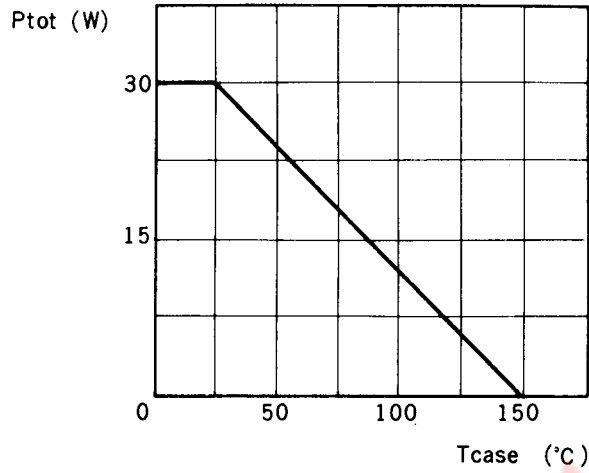


ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ )

		2SB546A, 2SB547A		2SD401A, 2SD402A	
<u>Voltages (<math>T_{amb} = 25^{\circ}\text{C}</math>)</u>					
Collector-base voltage (open emitter)	$V_{CBO}$	MAX.	-200	200	V
Collector-emitter voltage (open base)	$V_{CEO}$	MAX.	-150	150	V
Emitter-base voltage (open collector)	$V_{EBO}$	MAX.	-5.0	5.0	V
<u>Currents (<math>T_{amb} = 25^{\circ}\text{C}</math>)</u>					
Collector current (D.C.)	$I_C$	MAX.	-2.0	2.0	A
Collector current (peak value)	$I_{CM}$	MAX.	-3.0	3.0	A
Base current (peak value)	$I_{BM}$	MAX.	-1.5	1.5	A
<u>Power dissipation</u>					
Total power dissipation at $T_{case} = 25^{\circ}\text{C}$	$P_{tot}$	MAX.	30		W
<u>TEMPERATURES</u>					
Storage temperature	$T_{stg}$		-55 to +150		$^{\circ}\text{C}$
Junction temperature	$T_j$		150		$^{\circ}\text{C}$
<u>THERMAL RESISTANCE</u>					
from junction to case	$R_{th\ j-case}$		4.16		$^{\circ}\text{C/W}$
from junction to ambient in free air	$R_{th\ j-a}$		78		$^{\circ}\text{C/W}$

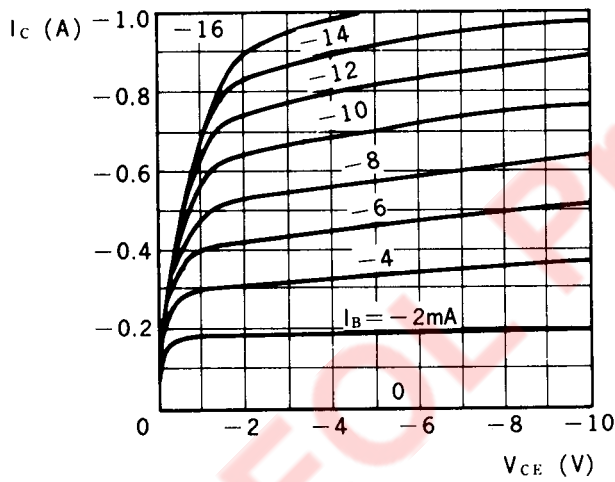
ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ )

		2SB546A, 2SB547A, 2SD401A, 2SD402A		
<u>Collector cut-off current</u>				
$I_E = 0, V_{CB} = -150/150\text{V}$	$I_{CBO}$	<	-50/50	$\mu\text{A}$
<u>Emitter cut-off current</u>				
$V_{EB} = -4.0/4.0\text{V}, I_C = 0$	$I_{EBO}$	<	-50/50	$\mu\text{A}$
<u>D.C. current gain</u>				
$V_{CE} = -10/10\text{V}, I_C = -0.4/0.4\text{A}$	$h_{FE}$	>	40/40	
<u>Collector-emitter saturation voltage</u>				
$I_C = -0.5/0.5\text{A}, I_B = -0.05/0.05\text{A}$	$V_{CE(sat)}$	<	-2.0/2.0	V
<u>Transition frequency</u>				
$V_{CE} = -10/10\text{V}, I_C = -0.4/0.4\text{A}$	$f_T$	TYP.	7/7	MHz
<u>Collector capacitance</u>				
$V_{CB} = -10/10\text{V}, f = 1.0\text{MHz}, I_E = 0$	$C_C$	TYP.	75/45	pF

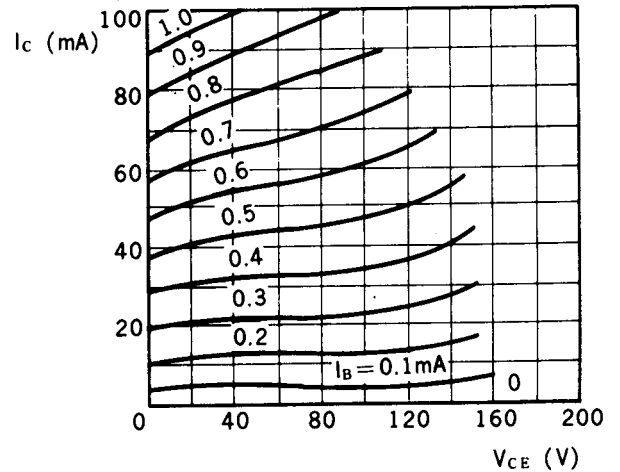
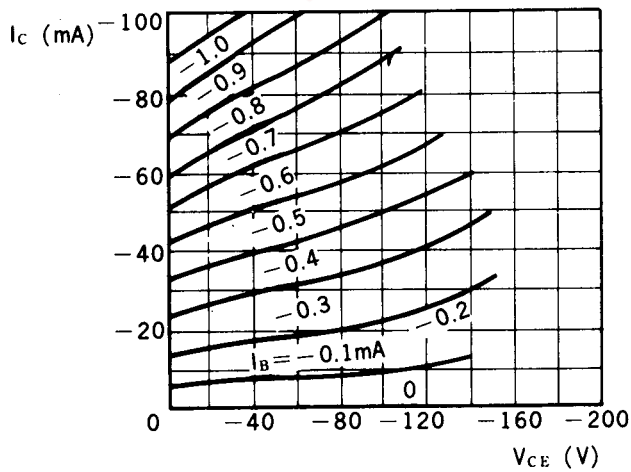
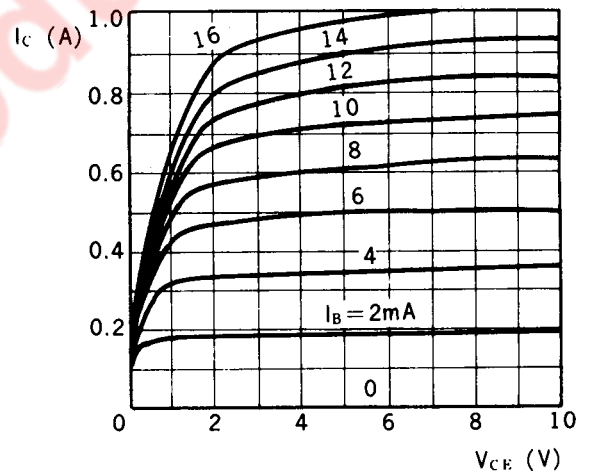


TYPICAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}C$ )

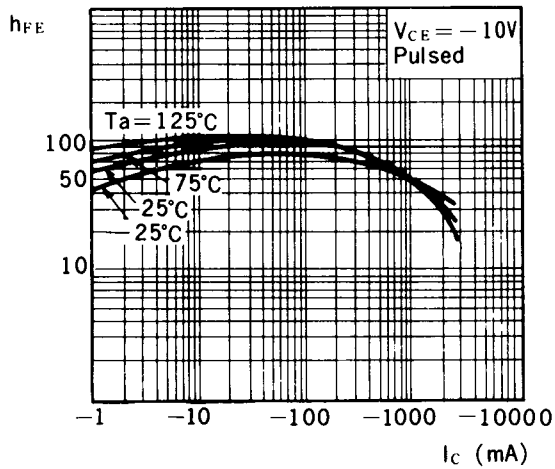
2SB546A, 2SB547A



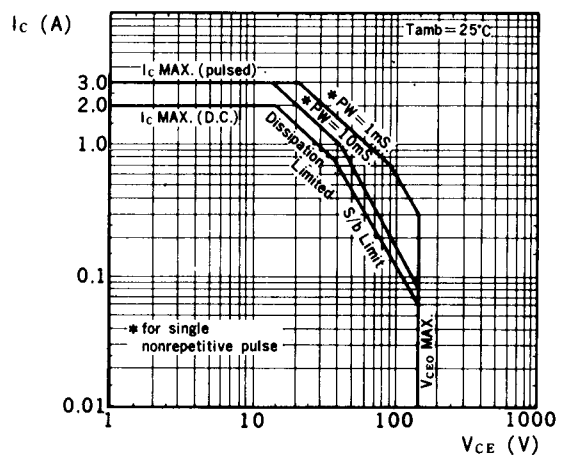
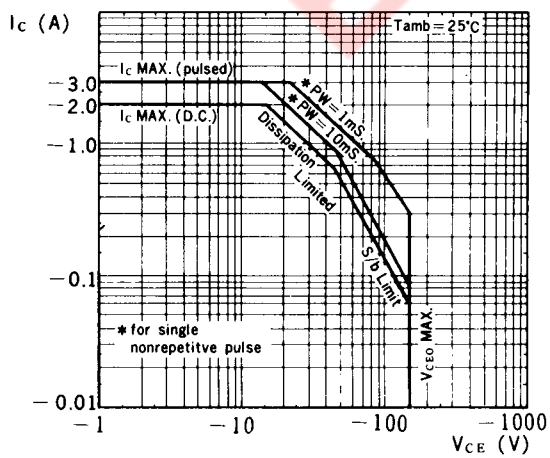
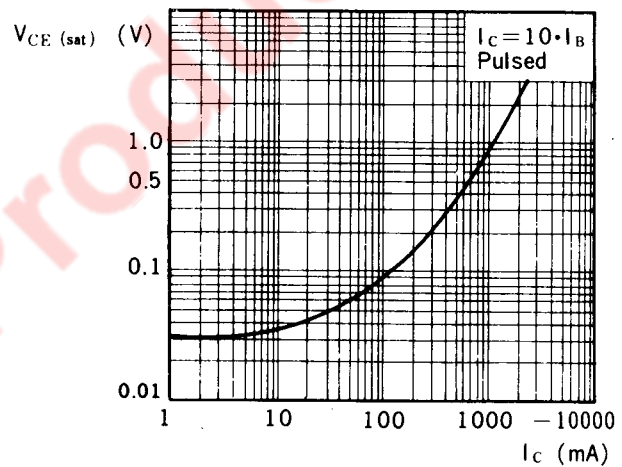
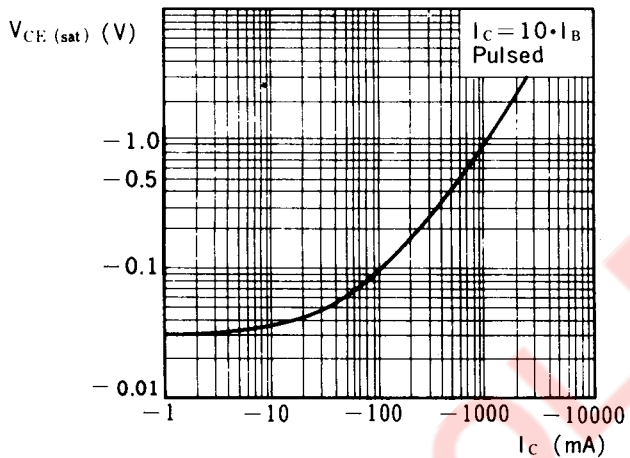
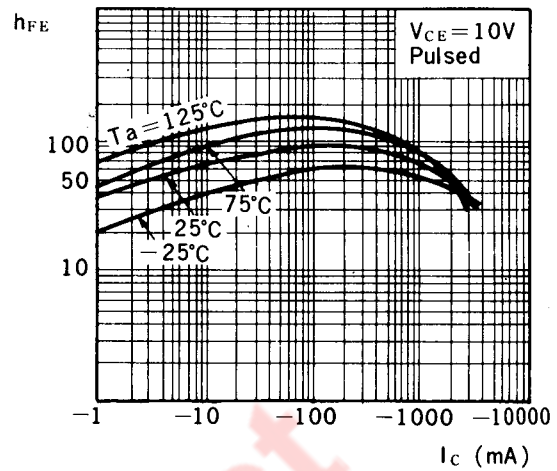
2SD401A, 2SD402A



2SB546A, 547A



2SD401A, 2SD402A



Nippon Electric Co., Ltd.

NEC Building, 33-1, Shiba-Gochome, Minato-ku, Tokyo 108, Japan  
 Tel: Tokyo 454-1111  
 Cable Address: "MICROPHONE TOKYO"  
 Telex Address: NEC TOK A J22686

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