



No.2437A

2SA1538/2SC3953

PNP/NPN Epitaxial Planar Silicon Transistor
 High-Definition CRT Display
 Video Output Applications

Applications

- High-definition CRT display video output, wide-band amp

Features

- High f_T : $f_T=400\text{MHz}$
- High breakdown voltage: $V_{CE0}=120\text{Vmin}$
- Small reverse transfer capacitance and excellent HF response: $C_{re}=1.7\text{pF/NPN}$, 2.2pF/PNP
- Complementary PNP and NPN types
- Adoption of FBET process
- Micaless type: T0126 plastic package

():PNP

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Value	unit
Collector-to-Base Voltage	V_{CB0}	(-)120	V
Collector-to-Emitter Voltage	V_{CE0}	(-)120	V
Emitter-to-Base Voltage	V_{EB0}	(-)3	V
Collector Current	I_C	(-)200	mA
Collector Current (Pulse)	I_{CP}	(-)400	mA
Collector Dissipation	P_C	1.3	W
$T_c=25^\circ\text{C}$			
Junction Temperature	T_J	8	W
Storage Temperature	T_{stg}	150	$^\circ\text{C}$
		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Test Conditions	min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)80\text{V}, I_E=0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)2\text{V}, I_C=0$			(-)1.0	μA
DC Current Gain	h_{FE1}	$V_{CE}=(-)10\text{V}, I_C=(-)10\text{mA}$	40*		320*	
	h_{FE2}	$V_{CE}=(-)10\text{V}, I_C=(-)100\text{mA}$	20			
Gain Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}, I_C=(-)50\text{mA}$		400		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)30\text{V}, f=1\text{MHz}$		2.1		pF
				(2.8)		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB}=(-)30\text{V}, f=1\text{MHz}$		1.7		pF
				(2.2)		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)30\text{mA}, I_B=(-)3\text{mA}$			(-)1.0	V
E-B Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)30\text{mA}, I_B=(-)3\text{mA}$			(-)1.0	V

* h_{FE1} : The 2SA1538/2SC3953 are classified by 50mA h_{FE} as follows:

40	C	80	60	D	120	100	E	200	160	F	320
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Package Dimensions 2042A
(unit: mm)





