



MPSA05/FTSOA05
MPSA06/FTSOA06

NPN Small Signal General Purpose Amplifiers

T-29-23

- V_{CE0} ... 60 V (Min) (MPS/FTSOA05), 80 V (Min) (MPS/FTSOA06)
- h_{FE} ... 50 (Min) @ 10 mA and 100 mA
- $V_{CE(sat)}$... 0.25 V (Max) @ 100 mA
- Complements ... MPS/FTSOA55, MPS/FTSOA56, (PNP)

PACKAGE

MPSA05	TO-92
MPSA06	TO-92
FTSOA05	TO-236AA/AB
FTSOA06	TO-236AA/AB

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature	-55° C to 150° C
Operating Junction Temperature	150° C

Power Dissipation (Notes 2 & 3)

Total Dissipation at	MPS	FTSO
25° C Ambient Temperature	0.625 W	0.350 W*
70° C Ambient Temperature	0.400 W	
25° C Case Temperature	1.0 W	

Voltages & Currents

	A05	A06
V_{CE0} Collector to Emitter Voltage (Note 4)	60 V	80 V
V_{CBO} Collector to Base Voltage	60 V	80 V
V_{EBO} Emitter to Base Voltage	4.0 V	4.0 V
I_C Collector Current	500 mA	500 mA

ELECTRICAL CHARACTERISTICS (25° C Ambient Temperature unless otherwise noted) (Note 6)

SYMBOL	CHARACTERISTIC	A05		A06		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
BV_{CE0}	Collector to Emitter Breakdown Voltage	60		80		V	$I_C = 1.0 \text{ mA}, I_B = 0$
BV_{EBO}	Emitter to Base Breakdown Voltage	4.0		4.0		V	$I_E = 100 \mu\text{A}, I_C = 0$
I_{CBO}	Collector Cutoff Current		100		100	nA	$V_{CB} = 60 \text{ V}, I_E = 0$ $V_{CB} = 80 \text{ V}, I_E = 0$

NOTES:

1. These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
 2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
 3. These ratings give a maximum junction temperature of 150° C and (TO-92) junction-to-case thermal resistance of 125° C/W (derating factor of 8.0 mW/° C); junction-to-ambient thermal resistance of 200° C/W (derating factor of 5.0 mW/° C); (TO-236) junction-to-ambient thermal resistance of 357° C/W (derating factor of 2.8 mW/° C).
 4. Rating refers to a high current point where collector to emitter voltage is lowest.
 5. Pulse conditions: length = 300 μs ; duty cycle = 1%.
 6. For product family characteristic curves, refer to Curve Set T149.
- * Package mounted on 99.5% alumina 8 mm x 8 mm x 0.6 mm.

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ELECTRICAL CHARACTERISTICS (25° C Ambient Temperature unless otherwise noted) (Note 6)

SYMBOL	CHARACTERISTIC	A05		A06		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
h_{FE}	DC Current Gain (Note 5)	50		50			$I_C = 100 \text{ mA}$, $V_{CE} = 1.0 \text{ V}$ $I_C = 10 \text{ mA}$, $V_{CE} = 1.0 \text{ V}$
$V_{CE(sat)}$	Collector to Emitter Saturation Voltage (Note 5)		0.25		0.25	V	$I_C = 100 \text{ mA}$, $I_B = 10 \text{ mA}$
$V_{BE(ON)}$	Base to Emitter "On" Voltage		1.2		1.2	V	$I_C = 100 \text{ mA}$, $V_{CE} = 1.0 \text{ V}$
f_T	Current Gain Bandwidth Product	50		50		MHz	$I_C = 100 \text{ mA}$, $V_{CE} = 1.0 \text{ V}$, $f = 100 \text{ MHz}$