



A Schlumberger Company

**MPS6560/FTSO6560**  
**MPS6561/FTSO6561**  
**MPS6562/FTSO6562**  
 NPN-PNP Small Signal General  
 Purpose Complementary Amplifiers

T-29-23

- $V_{CE0}$  ... **MPS/FTSO6560/2),**  
**20 V (MPS/FTSO6561)**
- $h_{FE}$  ... **50-200 @ 500 mA (MPS/FTSO6560/2),**  
**@ 350 mA (MPS/FTSO6561)**
- $V_{CE(sat)}$  ... **0.5 V (Max) @ 500 mA (MPS/FTSO6560/2),**  
**@ 350 mA (MPS/FTSO6561)**
- **Complements ... MPS/FTSO6560, MPS/FTSO6561 (NPN);**  
**MPS/FTSO6562 (PNP)**

**PACKAGE**  
 MPS6560  
 MPS6561  
 MPS6562  
 FTSO6560  
 FTSO6561  
 FTSO6562

TO-92  
 TO-92  
 TO-92  
 TO-236AA/AB  
 TO-236AA/AB  
 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)**

	MPS	FTSO
Total Dissipation at 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**

	6560/62	6561
$V_{CE0}$ Collector to Emitter Voltage (Note 4)	25 V	20 V
$V_{CB0}$ Collector to Base Voltage	25 V	20 V
$V_{EB0}$ Emitter to Base Voltage	4.0 V	4.0 V
$I_c$ Collector Current	600 mA	600 mA

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

SYMBOL	CHARACTERISTIC	6560/62		6561		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
$BV_{EB0}$	Emitter to Base Breakdown Voltage	5.0		-5.0		V	$I_E = 100 \mu A, I_C = 0$
$I_{CE0}$	Collector Cutoff Current		100		100	nA	$V_{CE} = 25 V, I_B = 0$ $V_{CE} = 20 V, I_B = 0$
$I_{CB0}$	Collector Cutoff Current		100		100	nA	$V_{CB} = 20 V, I_E = 0$
$I_{EB0}$	Emitter Cutoff Current		100		100	nA	$V_{EB} = 4.0 V, I_C = 0$

**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  $\mu s$ ; duty cycle = 1%.
  6. For product family characteristic curves, refer to Curve Set T124 for MPS6560, MPS6561 & T12 for MPS6562.
- \* Package mounted on 99.5% alumina 8 mm x 8 mm x 0.6 mm.

MPS6560/FTSO6560 T-29.23  
 MPS6561/FTSO6561  
 MPS6562/FTSO6562

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

SYMBOL	CHARACTERISTIC	6560/62		6561		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
$h_{FE}$	DC Current Gain (Note 5)	35 50 50	200	35 50 50	200		$I_C = 10 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 100 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 500 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 350 \text{ mA}, V_{CE} = 1.0 \text{ V}$
$V_{CE(sat)}$	Collector to Emitter Saturation Voltage (Note 5)		0.5		-0.5	V V	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$ $I_C = 350 \text{ mA}, I_B = 35 \text{ mA}$
$V_{BE(ON)}$	Base to Emitter "On" Voltage (Note 5)		1.2		-1.2	V V	$I_C = 500 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 350 \text{ mA}, V_{CE} = 1.0 \text{ V}$
$f_T$	Current Gain Bandwidth Product	60		60		MHz	$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V},$ $f = 30 \text{ MHz}$
$C_{ob}$	Output Capacitance		30		30	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 100 \text{ kHz}$