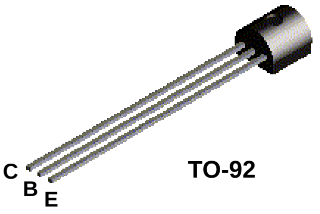
MPSL01



NPN General Purpose Amplifier

This device is designed for general purpose, high voltage amplifiers and gas discharge display driving. Sourced from Process 16. See 2N5551 for characteristics.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	120	V
V_{CBO}	Collector-Base Voltage	140	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current - Continuous	200	mA
T_J, T_{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°C

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:
1) These ratings are based on a maximum junction temperature of 150 degrees C.
2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		MPSL01	
P_D	Total Device Dissipation Derate above 25°C	625 5.0	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	°C/W

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	$I_C = 1.0mA, I_B = 0$	120		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\ \mu A, I_E = 0$	140		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\ \mu A, I_C = 0$	5.0		V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 75\ V, I_E = 0$		1.0	µA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 4.0\ V, I_C = 0$		100	nA
ON CHARACTERISTICS*					
h_{FE}	DC Current Gain	$V_{CE} = 5.0\ V, I_C = 10\ mA$	50	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 10\ mA, I_B = 1.0\ mA$ $I_C = 50\ mA, I_B = 5.0\ mA$		0.2 0.3	V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 10\ mA, I_B = 1.0\ mA$ $I_C = 50\ mA, I_B = 5.0\ mA$		1.2 1.4	V V
SMALL SIGNAL CHARACTERISTICS					
C_{ob}	Output Capacitance	$V_{CB} = 10\ V, f = 1.0\ MHz$		8.0	pF
h_{fe}	Small-Signal Current Gain	$I_C = 1.0\ mA, V_{CE} = 10\ V,$ $f = 1.0\ kHz$	30		
F_T	Current Gain - Bandwidth Product	$I_C = 10\ mA, V_{CE} = 10\ V,$	60		MHz

*Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2.0%