ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089
http://www.nteinc.com

MPSA13 & MPSA14
Silicon NPN Transistor
Darlington, General Purpose Amplifier, Preamp, Driver
TO–92 Type Package

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Collector–Emitter Voltage, V_{CES} 30V
Collector–Base Voltage, V_{CBO} 30V
Emitter–Base Voltage, V_{EBO} 10V
Continuous Collector Current, I_C 500mA
Total Device Dissipation (T_A = +25°C), P_D 625mW
Derate Above 25°C . . . . . 5mW/°C
Total Device Dissipation (T_C = +25°C), P_D 1.5W
Derate Above 25°C . . . . . 12mW/°C
Operating Junction Temperature Range, T_J . . . . . –55° to +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 83.3°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 200°C/W

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C = 100μA, V_{BE} = 0	30	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 30V, I_E = 0	–	–	100	nA
Emitter Cutoff Current	I_{EBO}	V_{BE} = 10V, I_C = 0	–	–	100	nA
ON Characteristics (Note 1)						
DC Current Gain MPSA13	h_{FE}	I_C = 10mA, V_{CE} = 5V	5,000	–	–	
MPSA14			10,000	–	–	
MPSA13		I_C = 100mA, V_{CE} = 5V	10,000	–	–	
MPSA14			20,000	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 0.1mA	–	–	1.5	V
Base–Emitter ON Voltage	$V_{BE(on)}$	I_C = 100mA, V_{CE} = 5V	–	–	2.0	V
Small–Signal Characteristics						
Current Gain–Bandwidth Product	f_T	I_C = 10mA, V_{CE} = 10V, f = 100Mhz, Note 2	125	–	–	MHz

Note 1. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%
Note 2. $f_T = |h_{fe}| \bullet f_{test}$