MPSA12
MPSA13
MPSA14

SILICON
NPN DARLINGTON TRANSISTORS



TO-92 CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR MPSA12 series devices are silicon NPN Darlington transistors, manufactured by the epitaxial planar process, designed for applications requiring extremely high gain.

MARKING: FULL PART NUMBER

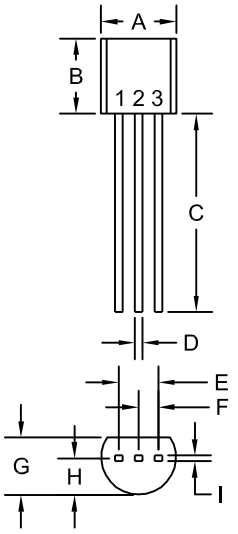
MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**	**MPSA12**	**MPSA13**	**MPSA14**	**UNITS**
Collector-Base Voltage	V_{CBO}	-	30	30	V
Collector-Emitter Voltage	V_{CES}	20	30	30	V
Emitter-Base Voltage	V_{EBO}		10		V
Continuous Collector Current	I_C		500		mA
Power Dissipation	P_D		625		mW
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +150		°C
Thermal Resistance	Θ_{JA}		200		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)		**MPSA12**		**MPSA13**		**MPSA14**		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=15V	-	100	-	-	-	-	nA
I_{CBO}	V_{CB}=30V	-	-	-	100	-	100	nA
I_{CES}	V_{CE}=15V	-	100	-	-	-	-	nA
I_{EBO}	V_{EB}=10V	-	100	-	100	-	100	nA
BV_{CES}	I_C=100μA	20	-	30	-	30	-	V
$V_{CE(SAT)}$	I_C=10mA, I_B=10μA	-	1.0	-	-	-	-	V
$V_{CE(SAT)}$	I_C=100mA, I_B=100μA	-	-	-	1.5	-	1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_B=10mA	-	1.4	-	-	-	-	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_B=100mA	-	-	-	2.0	-	2.0	V
h_{FE}	V_{CE}=5.0V, I_C=10mA	20K	-	5K	-	10K	-	
h_{FE}	V_{CE}=5.0V, I_C=100mA	-	-	10K	-	20K	-	
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	-	-	125	-	125	-	MHz

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TO-92 CASE - MECHANICAL OUTLINE



R1

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A (DIA)	0.175	0.205	4.45	5.21
B	0.170	0.210	4.32	5.33
C	0.500	-	12.70	-
D	0.016	0.022	0.41	0.56
E	0.100		2.54	
F	0.050		1.27	
G	0.125	0.165	3.18	4.19
H	0.080	0.105	2.03	2.67
I	0.015		0.38	

TO-92 (REV: R1)

LEAD CODE:
1) Emitter
2) Base
3) Collector

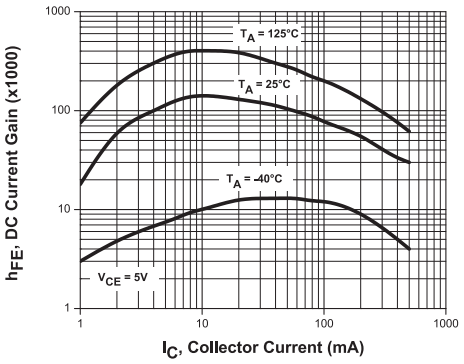
MARKING:
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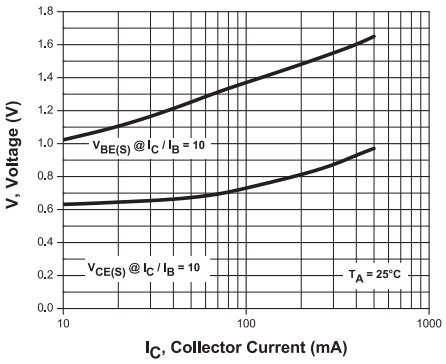
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TYPICAL ELECTRICAL CHARACTERISTICS

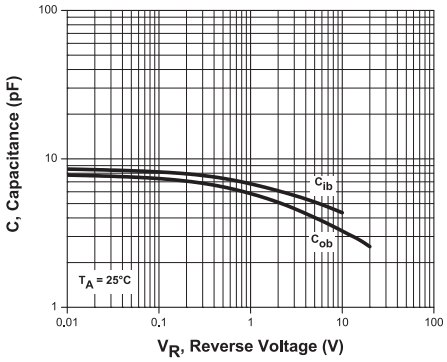
DC Current Gain



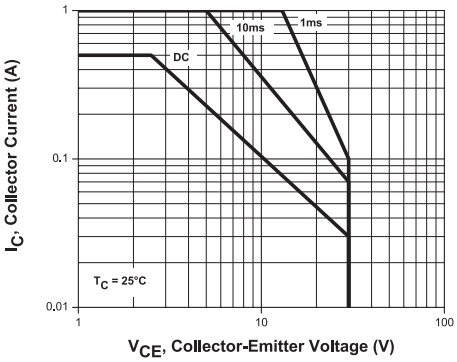
"ON" Voltage



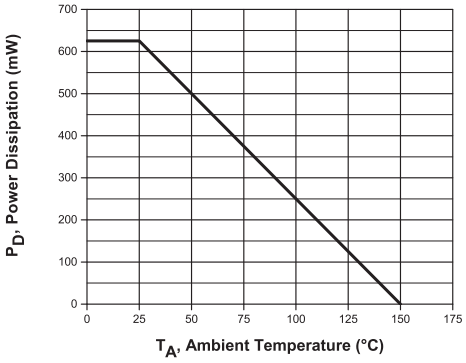
Capacitance



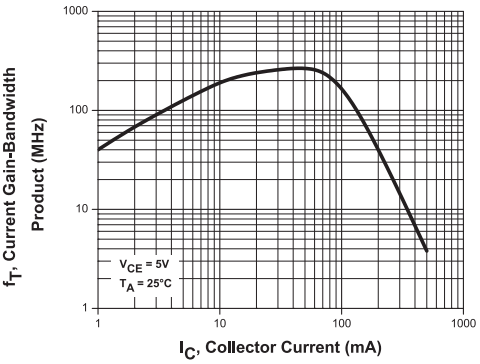
Safe Operating Area



Power Derating



Current Gain-Bandwidth Product



R1 (18-March 2014)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES

PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

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