CMPT3646

SURFACE MOUNT
NPN SILICON TRANSISTOR



SOT-23 CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT3646 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for ultra high speed switching applications.

MARKING CODE: C2R

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**		**UNITS**
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CES}	40	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	200	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**UNITS**
I_{CES}	V_{CE}=20V		0.5	μA
I_{CES}	V_{CE}=20V, T_A=65°C		3.0	μA
BV_{CBO}	I_C=100μA	40		V
BV_{CES}	I_C=10μA	40		V
BV_{CEO}	I_C=10mA	15		V
BV_{EBO}	I_E=100μA	5.0		V
$V_{CE(SAT)}$	I_C=30mA, I_B=3.0mA		0.20	V
$V_{CE(SAT)}$	I_C=30mA, I_B=3.0mA, T_A=65°C		0.30	V
$V_{CE(SAT)}$	I_C=100mA, I_B=10mA		0.28	V
$V_{CE(SAT)}$	I_C=300mA, I_B=30mA		0.50	V
$V_{BE(SAT)}$	I_C=30mA, I_B=3.0mA	0.75	0.95	V
$V_{BE(SAT)}$	I_C=100mA, I_B=10mA		1.20	V
$V_{BE(SAT)}$	I_C=300mA, I_B=30mA		1.70	V
h_{FE}	V_{CE}=0.4V, I_C=30mA	30	120	
h_{FE}	V_{CE}=0.5V, I_C=100mA	25		
h_{FE}	V_{CE}=1.0V, I_C=300mA	15		

R3 (1-February 2010)

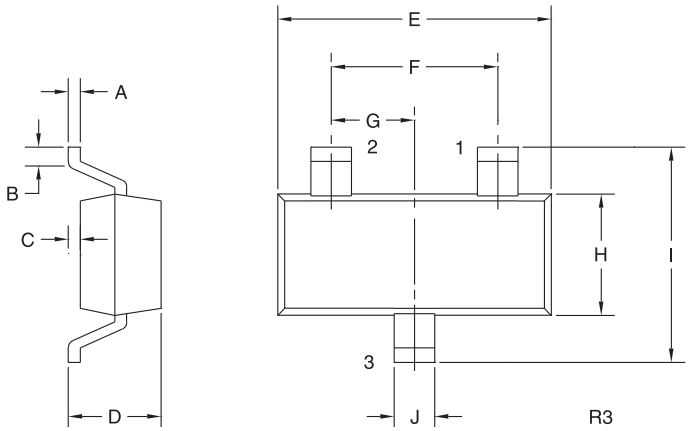
CMPT3646

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ELECTRICAL CHARACTERISTICS - Continued: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=30mA, f=100MHz	350		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		5.0	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0	pF
t_{on}	V_{CC}=10V, I_C=300mA, I_{B1}=30mA		18	ns
t_{off}	V_{CC}=10V, I_C=300mA, I_{B1}=I_{B2}=30mA		28	ns
t_s	V_{CC}=10V, I_C=I_{B1}=I_{B2}=10mA		18	ns

SOT-23 CASE - MECHANICAL OUTLINE



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

MARKING CODE: C2R

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.043	0.89	1.09
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	0.047	0.055	1.19	1.40
I	0.083	0.098	2.10	2.49
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R3)

R3 (1-February 2010)

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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For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centralsemi.com/terms

http://www.centralsemi.com

Product End of Life Notification

PDN ID:	PDN01177
Notification Date:	4/23/21
Last Buy Date:	10/23/21
Last Shipment Date	4/23/22

Summary:The CP246 wafer process is discontinued and now classified as End of Life (EOL).

Although Central Semiconductor Corp. makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by other manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's ongoing Product Management Process. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

*** All Plating types (PBFREE,TIN/LEAD) for each item listed are included in this notice.**

Central Part Number	Suggested Replacement
CMPT3646 TR	N/A
CP246-PN3646-WN	N/A
PN3646	N/A
PN3646 APM	N/A
PN3646 TRE	N/A
PN3646-18	N/A
PN3646-5	N/A

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. Please email your requests to engineering@centralsemi.com.

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor Corp. will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.