

# Central<sup>TM</sup> Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA  
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Manufacturers of World Class Discrete Semiconductors

TN3724  
TN3725

NPN SILICON SWITCHING TRANSISTOR

JEDEC TO-237 CASE (EBC)

## DESCRIPTION

The CENTRAL SEMICONDUCTOR TN3724, TN3725 types are epoxy molded silicon NPN switching transistors manufactured by the epitaxial planar process designed for core driver and high speed switching applications.

MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$  unless otherwise noted)

	SYMBOL	TN3724	TN3725	UNIT
Collector-Base Voltage	$V_{CB0}$	50	80	V
Collector-Emitter Voltage	$V_{CES}$	50	80	V
Collector-Emitter Voltage	$V_{CEO}$	30	50	V
Emitter-Base Voltage	$V_{EBO}$		6.0	V
Collector Current	$I_C$	500		mA
Collector Current (peak)	$I_{CM}$	1.0		A
Power Dissipation	$P_D$	850		mW
Power Dissipation ( $T_C=25^\circ\text{C}$ )	$P_D$		2.0	W
Operating and Storage Junction Temperature	$T_J, T_{STG}$	-65 TO +150		$^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

SYMBOL	TEST CONDITIONS	TN3724		TN3725		UNIT
		MIN	MAX	MIN	MAX	
$I_{CBO}$	$V_{CB}=40\text{V}$		1.7		-	$\mu\text{A}$
$I_{CBO}$	$V_{CB}=60\text{V}$		-		1.7	$\mu\text{A}$
$I_{CES}$	$V_{CE}=\text{Rated } V_{CEO}$		10		10	$\mu\text{A}$
$BV_{CB0}$	$I_C=10\mu\text{A}$	50		80		V
$BV_{CES}$	$I_C=10\mu\text{A}$	50		80		V
$BV_{CEO}$	$I_C=10\text{mA}$	30		50		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	6.0		6.0		V
$V_{CE}(\text{SAT})$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.25		0.25	V
$V_{CE}(\text{SAT})$	$I_C=100\text{mA}, I_B=10\text{mA}$		0.20		0.26	V
$V_{CE}(\text{SAT})$	$I_C=300\text{mA}, I_B=30\text{mA}$		0.32		0.40	V
$V_{CE}(\text{SAT})$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.42		0.52	V
$V_{CE}(\text{SAT})$	$I_C=800\text{mA}, I_B=80\text{mA}$		0.65		0.80	V
$V_{CE}(\text{SAT})$	$I_C=1.0\text{A}, I_B=100\text{mA}$		0.75		0.95	V
$V_{BE}(\text{SAT})$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.76		0.76	V
$V_{BE}(\text{SAT})$	$I_C=100\text{mA}, I_B=10\text{mA}$		0.86		0.86	V
$V_{BE}(\text{SAT})$	$I_C=300\text{mA}, I_B=30\text{mA}$		1.1		1.1	V
$V_{BE}(\text{SAT})$	$I_C=500\text{mA}, I_B=50\text{mA}$	0.80	1.1	0.80	1.1	V
$V_{BE}(\text{SAT})$	$I_C=800\text{mA}, I_B=80\text{mA}$		1.5		1.5	V
$V_{BE}(\text{SAT})$	$I_C=1.0\text{A}, I_B=100\text{mA}$		1.7		1.7	V
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	30		30		
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=100\text{mA}$	60	150	60	150	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=300\text{mA}$	40		40		
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=500\text{mA}$	35		35		
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=800\text{mA}$	25		20		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{A}$	30		25		
$f_T$	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	300		300		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		12		10	pF
$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		55		55	pF
$t_{ON}$	$V_{CC}=30\text{V}, I_C=500\text{mA}, I_{B1}=50\text{mA}$		35		35	ns
$t_{OFF}$	$V_{CC}=30\text{V}, I_C=500\text{mA}, I_{B1}=I_{B2}=50\text{mA}$		60		60	ns

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> 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

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### 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).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
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[www.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

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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.centrasemi.com/terms](http://www.centrasemi.com/terms)

# Product End of Life Notification

<b>PDN ID:</b>	PDN01004
<b>Notification Date:</b>	10/01/15
<b>Last Buy Date:</b>	4/01/16
<b>Last Shipment Date</b>	10/01/16

Summary: All transistors manufactured in the TO-237 package are 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 various 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 Product Management Process. Any replacement product will be noted below. The effective date for placing the last purchase order will be six(6) months from the date of this notice and twelve(12) months from the notice date for final shipments; this may be extended if inventory is available.

<u>Central Part Number</u>	<u>Replacement</u>
CENW01	CEN-U01A
CENW01A	CEN-U01A
CENW05	CEN-U05
CENW06	CEN-U06
CENW07	CEN-U07
CENW10	CEN-U10
CENW13	MPSA13
CENW13 TRA	MPSA13
CENW14	MPSA14
CENW42	MPSA42
CENW42 TRA	MPSA42
CENW42 TRC	MPSA42
CENW42 TRE	MPSA42
CENW51	CEN-U51A
CENW51A	CEN-U51A
CENW55	CEN-U55
CENW56	CEN-U56
CENW57	CEN-U57
CENW60	CEN-U60
CENW63	MPSA63
CENW64	MPSA64
CENW64-5	MPSA64
CENW751	MPS751
CENW92	MPSA92
CENW92 TRA	MPSA92
CENW92 TRE	MPSA92
CEN1299	N/A
CEN940	N/A
TN2102	2N2102
TN2219A	2N2219A
TN2219A-5	2N2219A
TN2905A	2N2905A
TN2905A-5	2N2905A
TN3019	2N3019
TN3019-5	2N3019
TN3019A	2N3019
TN3020	2N3020
TN3053	2N3053

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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.

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\*\*\* CONTINUED FROM PRIOR PAGE \*\*\*

<b>Central Part Number</b>	<b>Replacement</b>
TN3724	N/A
2N6714	MPS650
2N6715	MPS650
2N6715 TRE	MPS650
2N6715-18	MPS650
2N6716	MPS651
2N6716 APM	MPS651
2N6716 APP	MPS651
2N6716 TRE	MPS651
2N6717	MPS651
2N6717 TRE	MPS651
2N6718	MPS651
2N6718 APM	MPS651
2N6718 TRE	MPS651
2N6718-5T	MPS651
2N6719	N/A
2N6719 TRA	N/A
2N6719 TRC	N/A
2N6719 TRE	N/A
2N6719-5T	N/A
2N6720	N/A
2N6721	N/A
2N6722	N/A
2N6723	N/A
2N6724	N/A
2N6724 TRA	N/A
2N6724-18	N/A
2N6725	N/A
2N6726	MPS650
2N6727	MPS750
2N6727 TRE	MPS750
2N6728	MPS751
2N6729	MPS751
2N6729 APP	MPS751
2N6730	MPS751
2N6730 APP	MPS751
2N6730 TRE	MPS751
2N6730-5T	MPS751
2N6731	N/A
2N6732	N/A
2N6733	N/A
2N6734	N/A
2N6735	N/A

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<http://www.centrasemi.com>

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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@centrasemi.com](mailto:engineering@centrasemi.com).

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