

CMST6427E

**ENHANCED SPECIFICATION
SURFACE MOUNT
NPN SILICON
DARLINGTON TRANSISTOR**

SUPERmini™



**ENHANCED
SPECIFICATION**

SOT-323 CASE

**Central
Semiconductor™**

www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMST6427E is an Enhanced Specification, SUPERmini™, NPN Silicon Darlington Transistor. High DC Current gains, coupled with a Low Saturation Voltage, make this an excellent choice for industrial/consumer applications where operational efficiency and small size are top priority.

MARKING CODE: C46

FEATURES:

- High current (500mA max)
- High DC current gain (15k min)
- Low saturation voltage ($V_{CE(SAT)}=0.8V$ max)
- High input impedance
- SUPERmini™ SOT-323 surface mount package

APPLICATIONS:

- Motor drivers
- Relay drivers
- Pre-amplifier input applications
- Voltage regulator controls

MAXIMUM RATINGS: ($T_A=25^{\circ}C$)

* Collector-Base Voltage
* Collector-Emitter Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL

V_{CBO}	60
V_{CES}	60
V_{CEO}	40
V_{EBO}	12
I_C	500
P_D	275
T_J, T_{stg}	-65 to +150
Θ_{JA}	455

UNITS

V
V
V
V
mA
mW
°C
°C/W

ELECTRICAL CHARACTERISTICS: ($T_A=25^{\circ}C$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=30V$		100	nA
* I_{CEO}	$V_{CE}=25V$		100	nA
I_{EBO}	$V_{BE}=10V$		100	nA
* BV_{CBO}	$I_C=100\mu A$	60		V
* BV_{CES}	$I_C=100\mu A$	60		V
BV_{CEO}	$I_C=10mA$	40		V
* BV_{EBO}	$I_E=10\mu A$	14		V
* $V_{CE(SAT)}$	$I_C=50mA, I_B=0.5mA$		0.80	V
$V_{CE(SAT)}$	$I_C=100mA, I_B=0.1mA$		0.85	V
* $V_{CE(SAT)}$	$I_C=500mA, I_B=0.5mA$		1.0	V

* Enhanced specification

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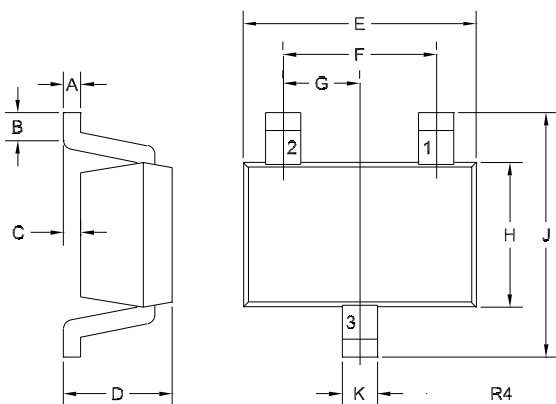


ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$V_{BE(SAT)}$	$I_C=500\text{mA}$, $I_B=0.5\text{mA}$			2.00	V
$V_{BE(ON)}$	$V_{CE}=5.0\text{V}$, $I_C=50\text{mA}$			1.75	V
* h_{FE}	$V_{CE}=5.0\text{V}$, $I_C=10\text{mA}$	15K		100K	
* h_{FE}	$V_{CE}=5.0\text{V}$, $I_C=100\text{mA}$	25K		200K	
* h_{FE}	$V_{CE}=5.0\text{V}$, $I_C=500\text{mA}$	15K		140K	
f_T	$V_{CE}=5.0\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$		200		MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$			7.0	pF
C_{ib}	$V_{BE}=0.5\text{V}$, $I_C=0$, $f=1.0\text{MHz}$			15	pF
NF	$V_{CE}=5.0\text{V}$, $I_C=1.0\text{mA}$, $R_S=100\text{k}\Omega$, $f=1.0\text{kHz}$ to 15.7kHz			10	dB

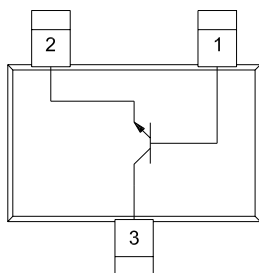
♦ Enhanced specification

SOT-323 CASE - MECHANICAL OUTLINE



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.002	0.008	0.05	0.20
B	0.004	-	0.10	-
C	-	0.004	-	0.10
D	0.031	0.043	0.80	1.10
E	0.071	0.087	1.80	2.20
F	0.051		1.30	
G	0.026		0.65	
H	0.045	0.053	1.15	1.35
J	0.079	0.094	2.00	2.40
K	0.008	0.016	0.20	0.40

SOT-323 (REV: R4)



LEAD CODE:

- 1) Base
- 2) Emitter
- 3) Collector

MARKING CODE: C46

R3 (28-March 2024)

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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