

CMST6427E

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



www.centrasemi.com

SUPERmini™



SOT-323 CASE

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		UNITS
V_{CBO}	60	V
V_{CES}	60	V
V_{CEO}	40	V
V_{EBO}	12	V
I_C	500	mA
P_D	275	mW
T_J, T_{stg}	-65 to +150	$^\circ C$
θ_{JA}	455	$^\circ C/W$

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

R1 (9-February 2010)

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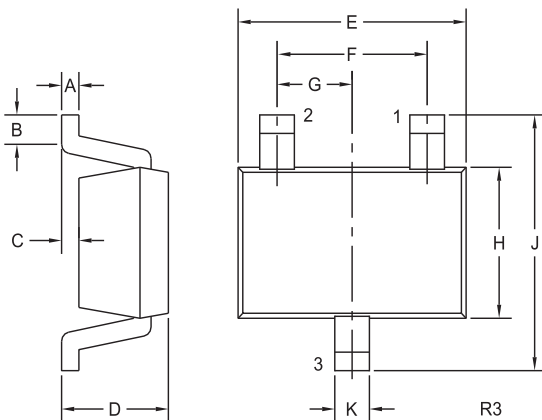


ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

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



SYMBOL	DIMENSIONS			
	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	0.087	2.00	2.20
K	0.008	0.016	0.20	0.40

SOT-323 (REV: R3)

LEAD CODE:

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

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