

CMST6427E

**ENHANCED SPECIFICATION
SURFACE MOUNT, SUPERmini™
SILICON NPN DARLINGTON
TRANSISTOR**

**ENHANCED
E
SPECIFICATION**



SUPERmini™

SOT-323 CASE

**Central™
Semiconductor Corp.**

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

	SYMBOL		UNITS
◆ Collector-Base Voltage	V_{CBO}	60	V
◆ Collector-Emitter Voltage	V_{CES}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	12	V
Continuous Collector Current	I_C	500	mA
Power Dissipation	P_D	275	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
Thermal Resistance	θ_{JA}	455	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	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

R0 (22-March 2006)

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SURFACE MOUNT, SUPERminiTM
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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

