

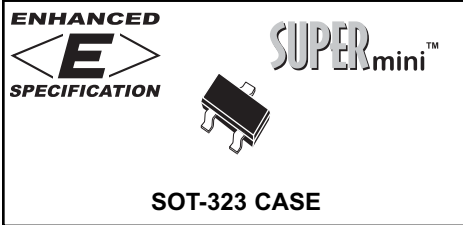
CMST6427E

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

**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:**

**APPLICATIONS:**

- MOTOR DRIVERS
- RELAY DRIVERS
- PRE-AMPLIFIER INPUT APPLICATIONS
- VOLTAGE REGULATOR CONTROLS

- 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

**MAXIMUM RATINGS:** ( $T_A = 25^\circ C$  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	$^\circ C$
Thermal Resistance	$\theta_{JA}$	455	$^\circ C/W$

**ELECTRICAL CHARACTERISTICS:** ( $T_A = 25^\circ C$  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)

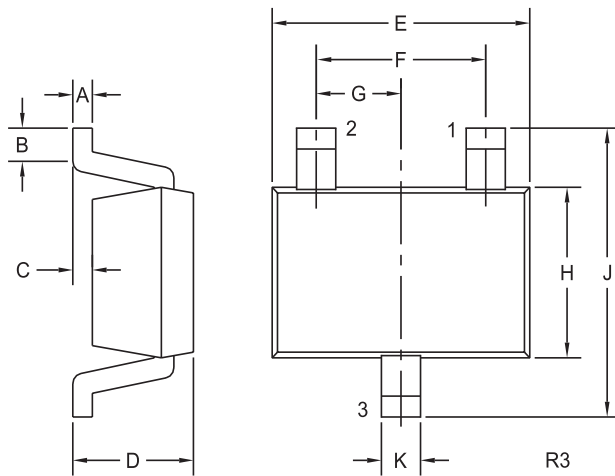
**ENHANCED SPECIFICATION**  
**SURFACE MOUNT, SUPERmini<sup>TM</sup>**  
**SILICON NPN DARLINGTON**  
**TRANSISTOR**

**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
◆ $h_{FE}$	<b><math>V_{CE}=5.0\text{V}, I_C=10\text{mA}</math></b>	<b>15K</b>		<b>100K</b>	
◆ $h_{FE}$	<b><math>V_{CE}=5.0\text{V}, I_C=100\text{mA}</math></b>	<b>25K</b>		<b>200K</b>	
◆ $h_{FE}$	<b><math>V_{CE}=5.0\text{V}, I_C=500\text{mA}</math></b>	<b>15K</b>		<b>140K</b>	
$f_T$	$V_{CE}=5.0\text{V}, I_C=10\text{mA}, f=100\text{MHz}$		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	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}, R_S=100\text{k}\Omega,$ $f=1.0\text{kHz TO } 15.7\text{kHz}$			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

**MARKING CODE: C46**