

CMLT6427E

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

PICOmini™



ENHANCED  
**E**  
SPECIFICATION

SOT-563 CASE

**Central**  
Semiconductor Corp.

www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLT6427E is an Enhanced Specification, PICOmini™, 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: C64**

**FEATURES:**

- High current (500mA Max)
- High DC current gain (15K Min)
- Low saturation voltage ( $V_{CE(SAT)} = 0.8V$  Max)
- High input impedance
- PICOmini™ SOT-563 surface mount package

**APPLICATIONS:**

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

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

◆ <b>Collector-Base Voltage</b>
◆ <b>Collector-Emitter Voltage</b>
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation (Note 1)
Power Dissipation (Note 2)
Power Dissipation (Note 3)
Operating and Storage Junction Temperature
Thermal Resistance (Note 1)

SYMBOL		UNITS
$V_{CBO}$	60	V
$V_{CES}$	60	V
$V_{CEO}$	40	V
$V_{EBO}$	12	V
$I_C$	500	mA
$P_D$	350	mW
$P_D$	300	mW
$P_D$	150	mW
$T_J, T_{stg}$	-65 to +150	$^\circ C$
$\theta_{JA}$	357	$^\circ C/W$

**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
$I_{EBO}$	$V_{EB} = 10V$			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

◆ Enhanced Specification

Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm<sup>2</sup>  
(2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm<sup>2</sup>  
(3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm<sup>2</sup>

R1 (20-January 2010)

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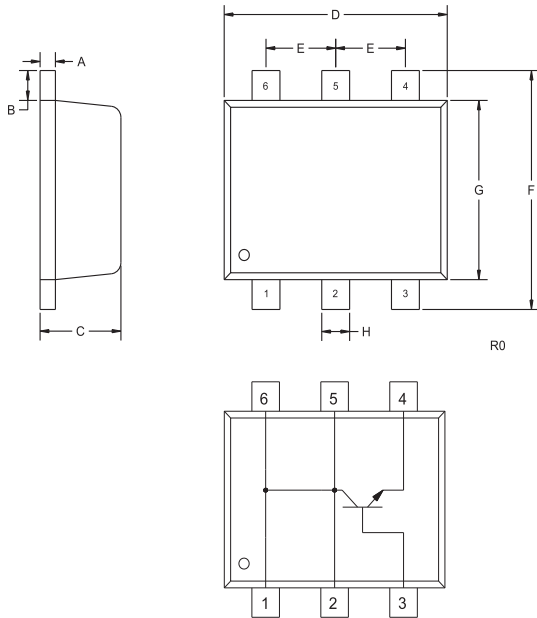


**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
♦ $BV_{EBO}$	$I_E=10\mu\text{A}$	14			V
♦ $V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=0.5\text{mA}$			0.80	V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=0.1\text{mA}$			0.85	V
♦ $V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=0.5\text{mA}$			1.0	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=0.5\text{mA}$			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	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}, R_S=100\text{k}\Omega,$ $f=1.0\text{kHz TO } 15.7\text{kHz}$			10	dB

♦ Enhanced Specification

**SOT-563 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.007	0.10	0.18
B		0.008		0.20
C	0.022	0.024	0.56	0.60
D	0.059	0.067	1.50	1.70
E		0.020		0.50
F	0.061	0.067	1.55	1.70
G		0.047		1.20
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R0)

**LEAD CODE:**

- 1) Collector
- 2) Collector
- 3) Base
- 4) Emitter
- 5) Collector
- 6) Collector

**MARKING CODE: C64**

R1 (20-January 2010)