CMLT6427E

ENHANCED SPECIFICATION
SURFACE MOUNT, PICOmini™
SILICON NPN DARLINGTON TRANSISTOR

ENHANCED E SPECIFICATION

PICOmini™

SOT-563 CASE

Central™
Semiconductor Corp.

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

APPLICATIONS:

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

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

MAXIMUM RATINGS: (T_A=25°C)

	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	350	mW	(Note 1)
Power Dissipation	P_D	300	mW	(Note 2)
Power Dissipation	P_D	150	mW	(Note 3)
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C	
Thermal Resistance	Θ_{JA}	357	°C/W	(Note 1)

ELECTRICAL CHARACTERISTICS: (T_A=25°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=100µA**	**60**			**V**
♦ **BV_{CES}**	**I_C=100µA**	**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 4.0 mm²
(2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0 mm²
(3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4 mm²

R0 (18-October 2005)

Central™
Semiconductor Corp.

CMLT6427E

ENHANCED SPECIFICATION

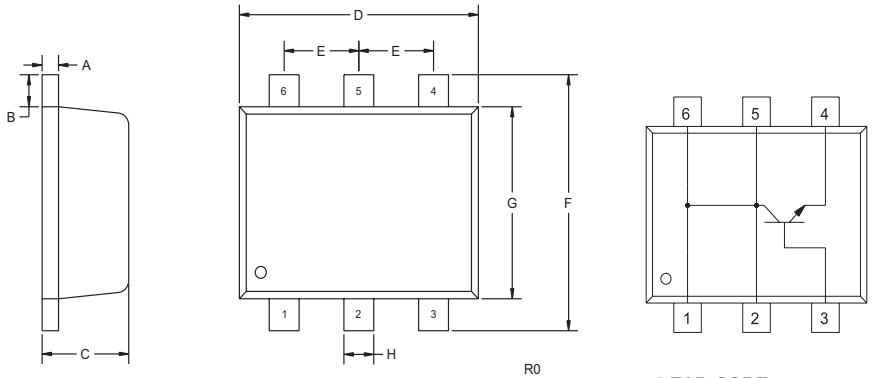
SURFACE MOUNT, PICOmini™ SILICON NPN DARLINGTON TRANSISTOR

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

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

♦ Enhanced Specification

SOT-563 CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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

R0 (18-October 2005)