

MMBT6428LT1G, MMBT6429LT1G

Amplifier Transistors

NPN Silicon

Features

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

Rating	Symbol	6428LT1	6429LT1	Unit
Collector - Emitter Voltage	V_{CEO}	50	45	Vdc
Collector - Base Voltage	V_{CBO}	60	55	Vdc
Emitter - Base Voltage	V_{EBO}	6.0		Vdc
Collector Current - Continuous	I_C	200		mAdc

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

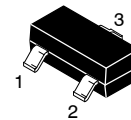
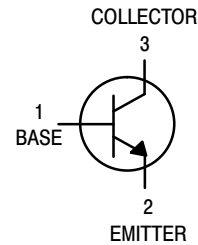
Rating	Symbol	Value	Unit
Total Device Dissipation FR-5 Board (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225	mW
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate, (Note 2) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300	mW
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	2.4	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

1. FR-5 = $1.0 \times 0.75 \times 0.062$ in.
2. Alumina = $0.4 \times 0.3 \times 0.024$ in. 99.5% alumina.



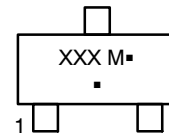
ON Semiconductor®

<http://onsemi.com>



SOT-23 (TO-236)
CASE 318
STYLE 6

MARKING DIAGRAM



XXX = Specific Device Code
MMBT6428LT1 - 1KM
MMBT6429LT1 - M1L
M = Date Code*
▪ = Pb-Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
MMBT6428LT1G	SOT-23 (Pb-Free)	3000 Tape & Reel
MMBT6429LT1G	SOT-23 (Pb-Free)	3000 Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MMBT6428LT1G, MMBT6429LT1G

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector – Emitter Breakdown Voltage (I _C = 1.0 mA _{dc} , I _B = 0) (I _C = 1.0 mA _{dc} , I _B = 0)	MMBT6428 MMBT6429	V _{(BR)CEO}	50 45	– –	V _{dc}
Collector – Base Breakdown Voltage (I _C = 0.1 mA _{dc} , I _E = 0) (I _C = 0.1 mA _{dc} , I _E = 0)	MMBT6428 MMBT6429	V _{(BR)CBO}	60 55	– –	V _{dc}
Collector Cutoff Current (V _{CE} = 30 V _{dc})		I _{CES}	–	0.1	μA _{dc}
Collector Cutoff Current (V _{CB} = 30 V _{dc} , I _E = 0)		I _{CBO}	–	0.01	μA _{dc}
Emitter Cutoff Current (V _{EB} = 5.0 V _{dc} , I _C = 0)		I _{EBO}	–	0.01	μA _{dc}

ON CHARACTERISTICS

DC Current Gain (I _C = 0.01 mA _{dc} , V _{CE} = 5.0 V _{dc}) (I _C = 0.1 mA _{dc} , V _{CE} = 5.0 V _{dc}) (I _C = 1.0 mA _{dc} , V _{CE} = 5.0 V _{dc}) (I _C = 10 mA _{dc} , V _{CE} = 5.0 V _{dc})	MMBT6428 MMBT6429 MMBT6428 MMBT6429 MMBT6428 MMBT6429 MMBT6428 MMBT6429	h _{FE}	250 500 250 500 250 500 250 500	– – 650 1250 – – – –	–
Collector – Emitter Saturation Voltage (I _C = 10 mA _{dc} , I _B = 0.5 mA _{dc}) (I _C = 100 mA _{dc} , I _B = 5.0 mA _{dc})		V _{CE(sat)}	– –	0.2 0.6	V _{dc}
Base – Emitter On Voltage (I _C = 1.0 mA _{dc} , V _{CE} = 5.0 V _{dc})		V _{BE(on)}	0.56	0.66	V _{dc}

SMALL-SIGNAL CHARACTERISTICS

Current – Gain – Bandwidth Product (I _C = 1.0 mA _{dc} , V _{CE} = 5.0 V _{dc} , f = 100 MHz)		f _T	100	700	MHz
Output Capacitance (V _{CB} = 10 V _{dc} , I _E = 0, f = 1.0 MHz)		C _{obo}	–	3.0	pF
Input Capacitance (V _{EB} = 0.5 V _{dc} , I _C = 0, f = 1.0 MHz)		C _{ibo}	–	8.0	pF

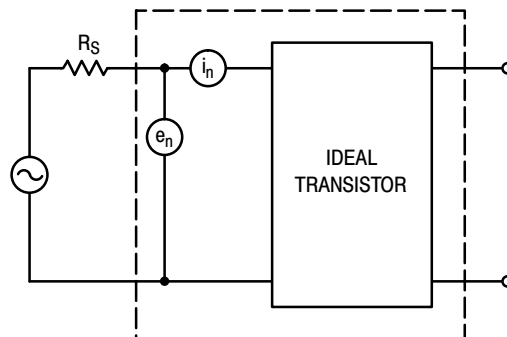


Figure 1. Transistor Noise Model

MMBT6428LT1G, MMBT6429LT1G

NOISE CHARACTERISTICS

($V_{CE} = 5.0 \text{ Vdc}$, $T_A = 25^\circ\text{C}$)

NOISE VOLTAGE

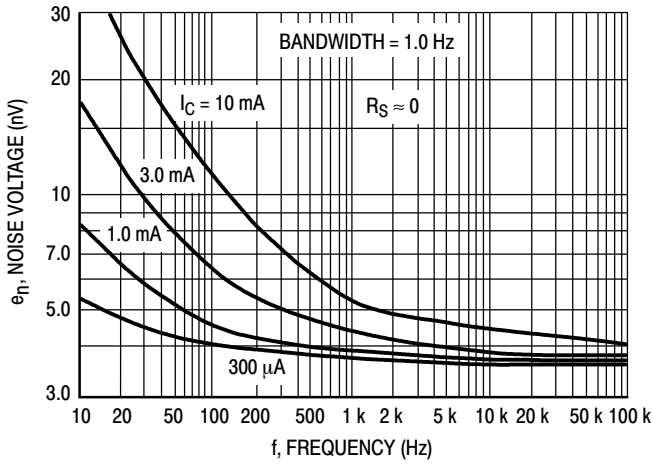


Figure 2. Effects of Frequency

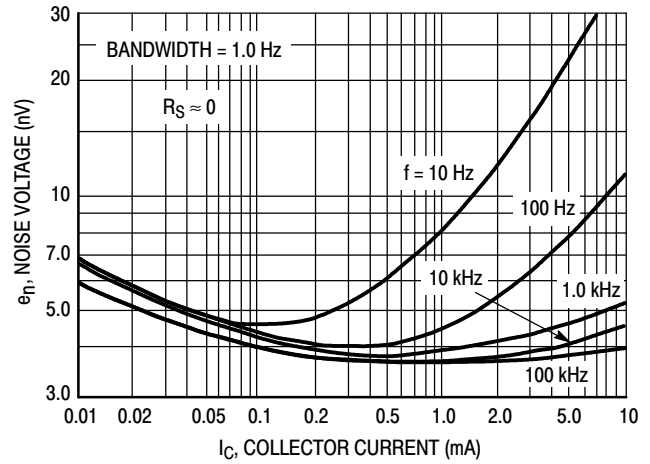


Figure 3. Effects of Collector Current

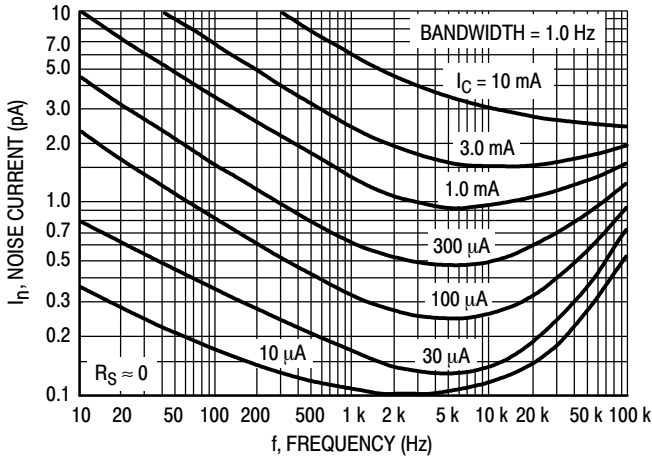


Figure 4. Noise Current

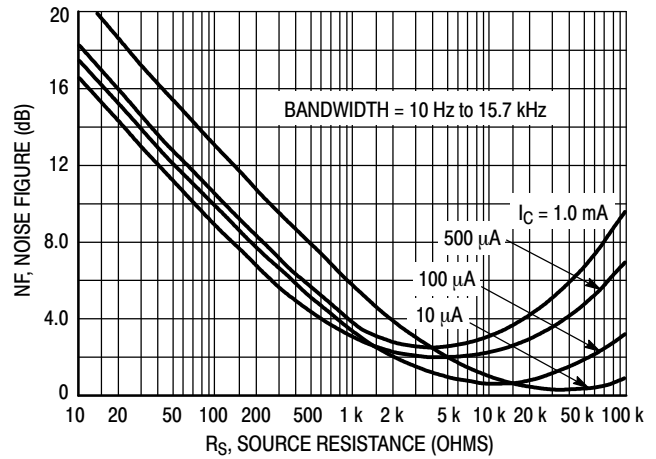


Figure 5. Wideband Noise Figure

100 Hz NOISE DATA

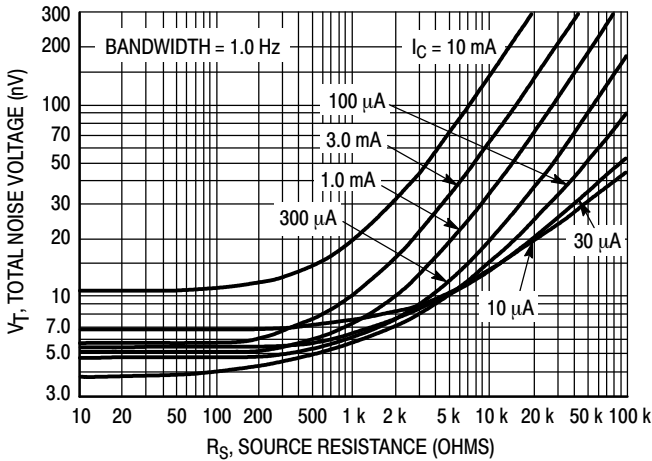


Figure 6. Total Noise Voltage

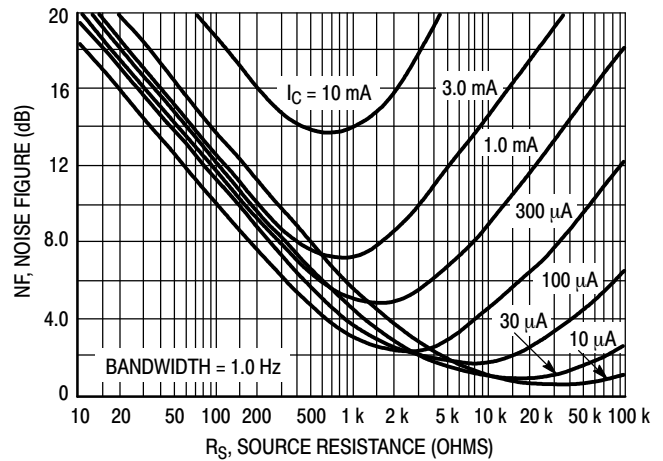


Figure 7. Noise Figure

MMBT6428LT1G, MMBT6429LT1G

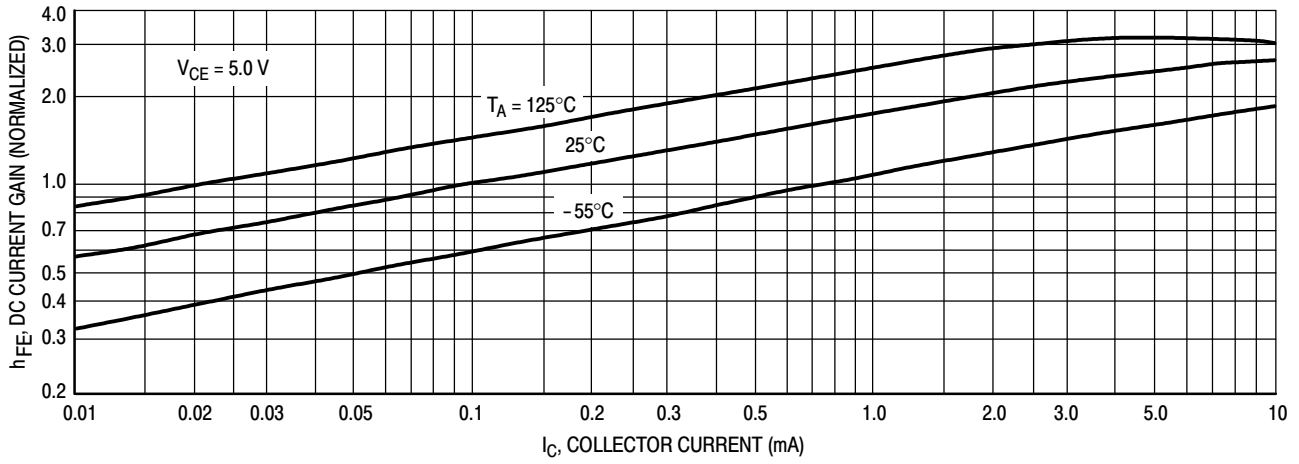


Figure 8. DC Current Gain

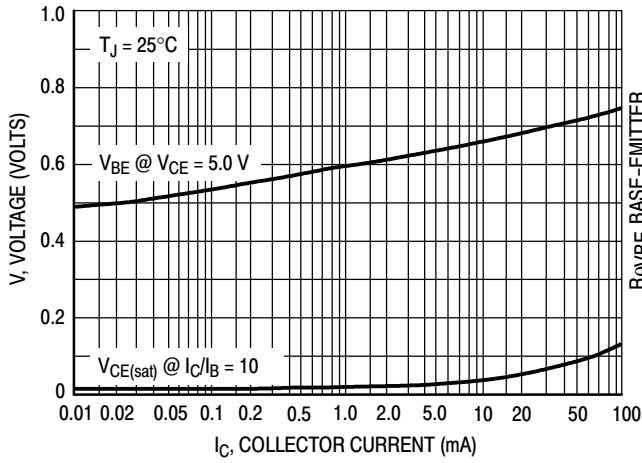


Figure 9. "On" Voltages

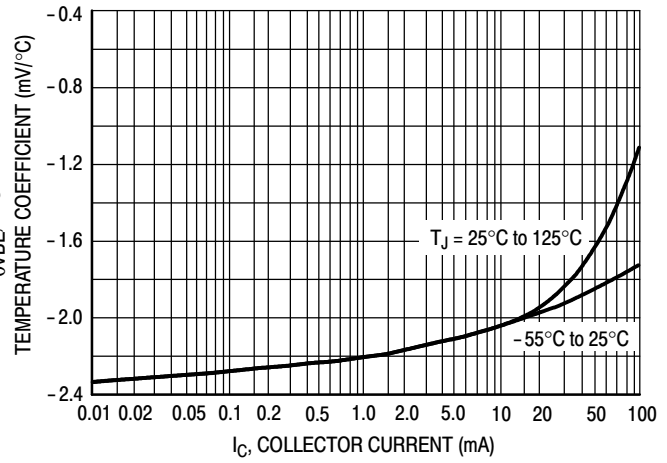


Figure 10. Temperature Coefficients

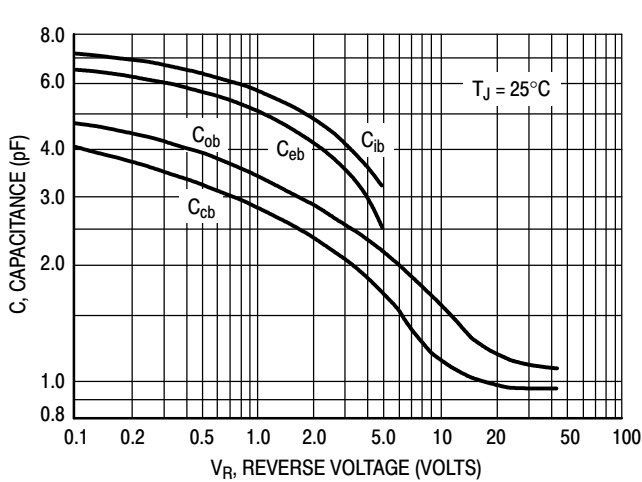


Figure 11. Capacitance

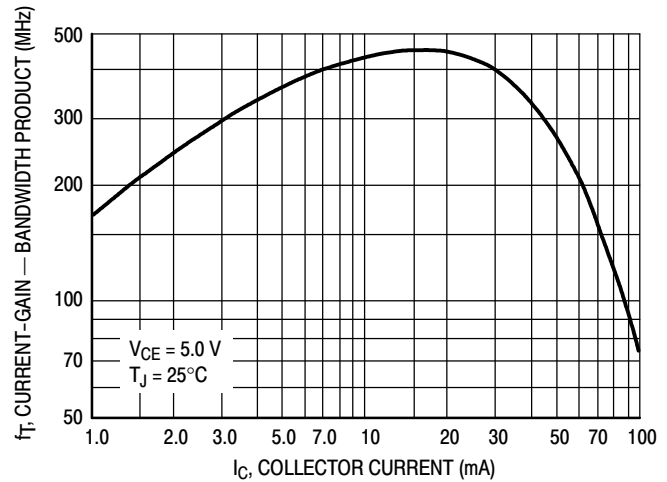
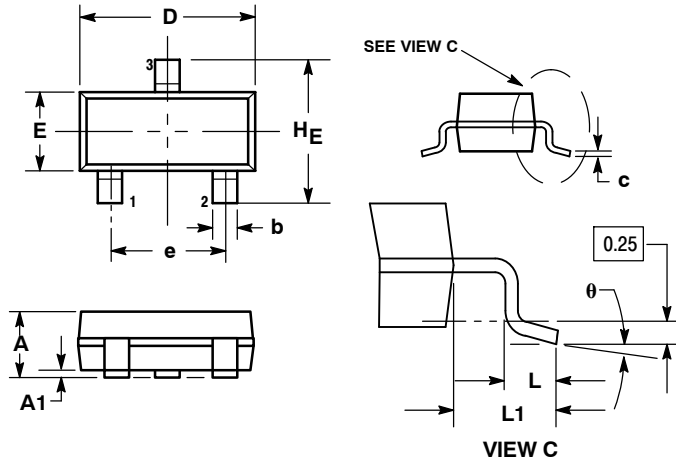


Figure 12. Current-Gain — Bandwidth Product

MMBT6428LT1G, MMBT6429LT1G

PACKAGE DIMENSIONS

SOT-23 (TO236)
CASE 318-08
ISSUE AN



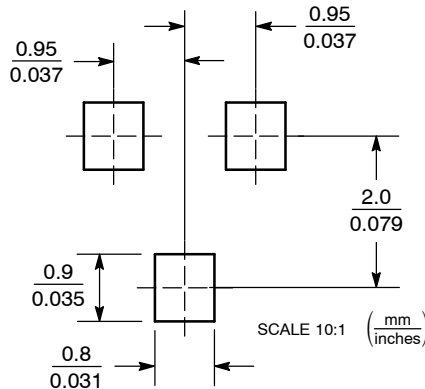
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.10	0.20	0.30	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104

STYLE 6:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

SOLDERING FOOTPRINT



ON Semiconductor and are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free
USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81-3-5773-3850

ON Semiconductor Website: www.onsemi.com
Order Literature: <http://www.onsemi.com/orderlit>

For additional information, please contact your local Sales Representative

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru