Ordering number : ENA1800B

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SC6144SG — NPN Epitaxial Planar Silicon Transistor

High-Current Switching Applications

Applications

- Relay drivers, lamp drivers, motor drivers

Features

- Adoption of MBIT process
- Large current capacitance (I_C=10A)
- Low collector-to-emitter saturation voltage (V_{CE}(sat)=180mV(typ.))
- High-speed switching (t_f=25ns(typ.))

Specifications

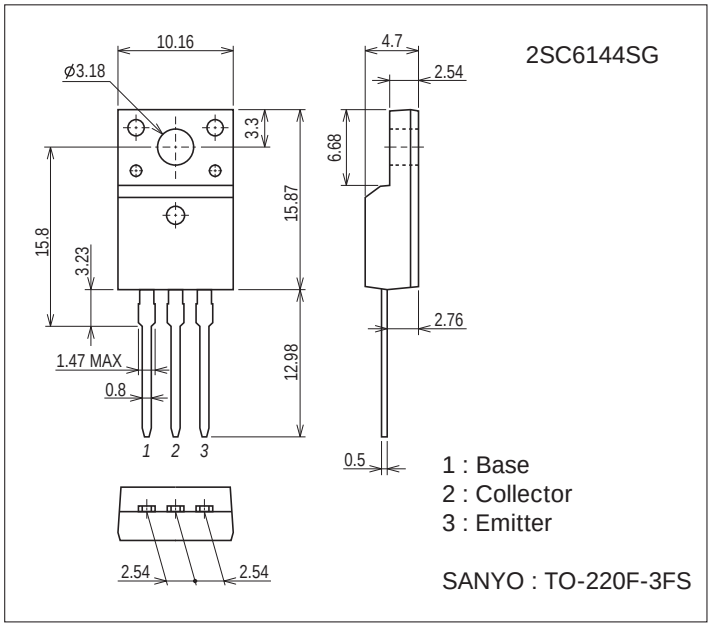
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		10	A
Collector Current (Pulse)	I_{CP}		13	A
Base Current	I_B		2	A
Collector Dissipation	P_C	Tc=25°C, P_T≤1s	25	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Package Dimensions

unit : mm (typ)

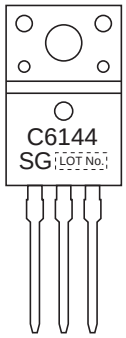
7528-003



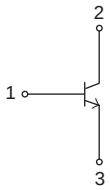
Product & Package Information

- Package : TO-220F-3FS
- JEITA, JEDEC : SC-67
- Minimum Packing Quantity : 50 pcs./magazine

Marking



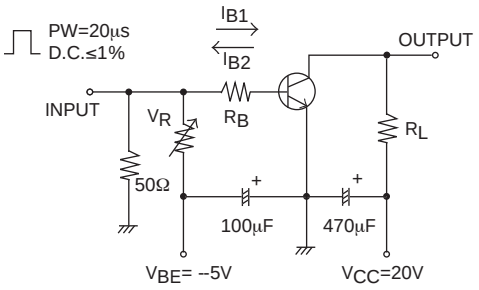
Electrical Connection



Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=40V, I_E=0A			10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0A			10	μA
DC Current Gain	h_{FE}	V_{CE}=2V, I_C=270mA	200		560	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=3A		330		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		60		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=6A, I_B=300mA		180	360	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=6A, I_B=300mA			1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=100μA, I_E=0A	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=100μA, I_C=0A	5			V
Turn-On Time	t_{on}	See specified Test Circuit.		62		ns
Storage Time	t_{stg}			350		ns
Fall Time	t_f			25		ns

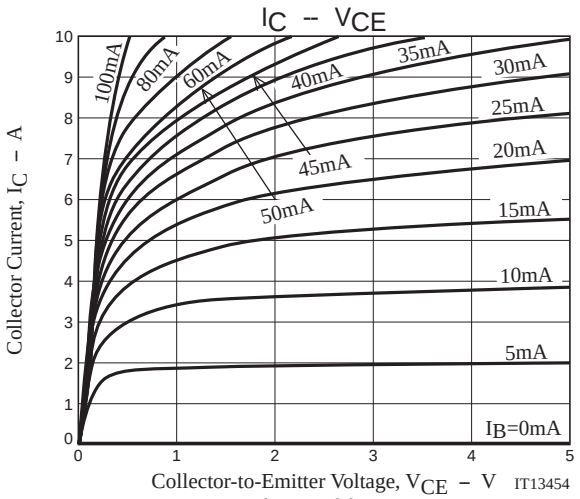
Switching Time Test Circuit

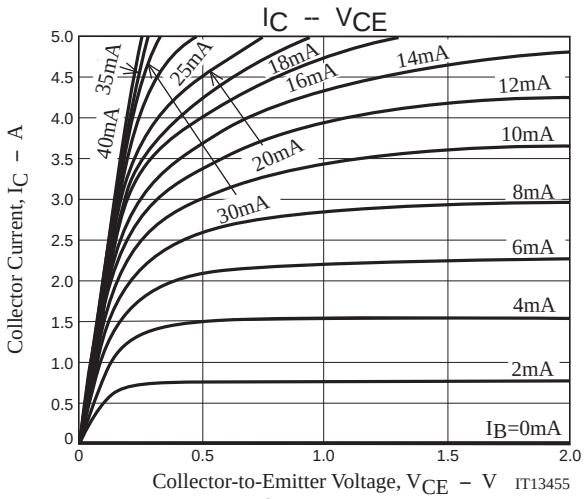


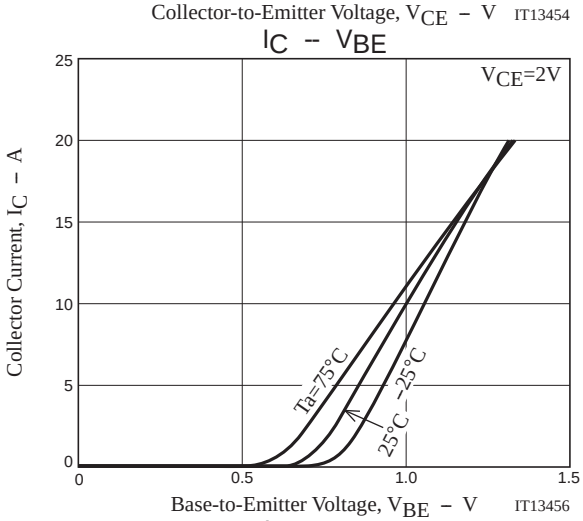
I_C=20I_{B1}= –20I_{B2}=5A

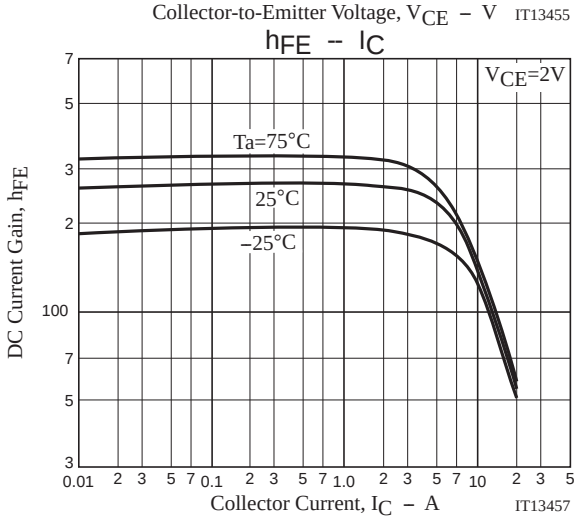
Ordering Information

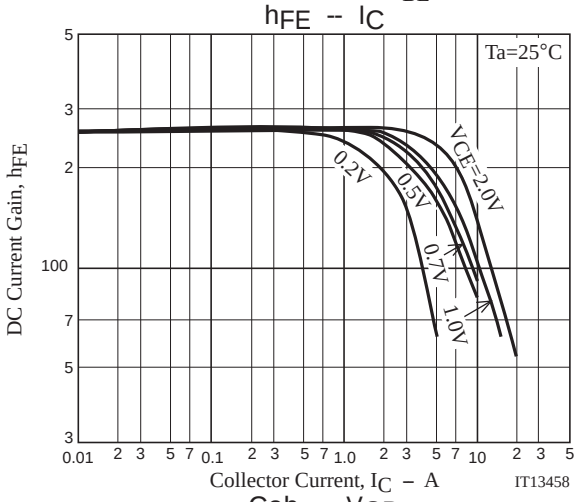
Device	Package	Shipping	memo
2SC6144SG	TO-220F-3FS	50pcs./magazine	Pb Free

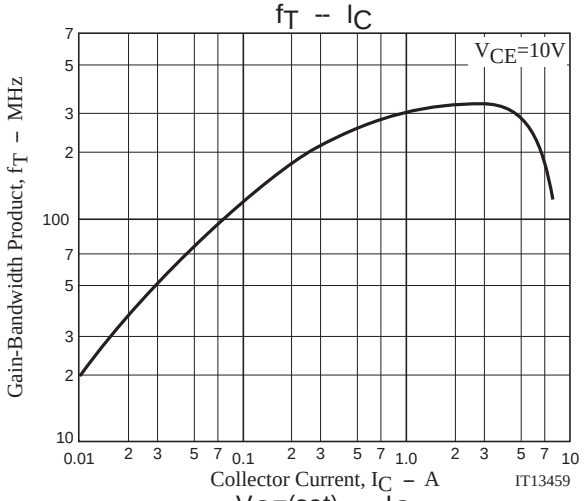

IC – VCE
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT13454
100mA
80mA
60mA
40mA
35mA
30mA
25mA
20mA
15mA
10mA
5mA
45mA
50mA
IB=0mA

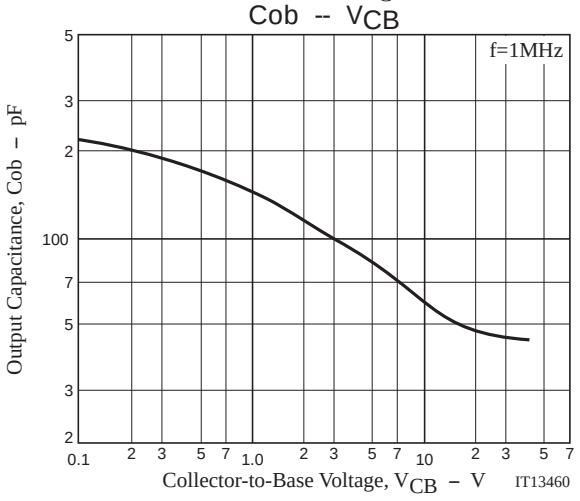

IC – VCE
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT13455
35mA
40mA
25mA
18mA
16mA
14mA
12mA
10mA
8mA
6mA
4mA
2mA
20mA
30mA
IB=0mA

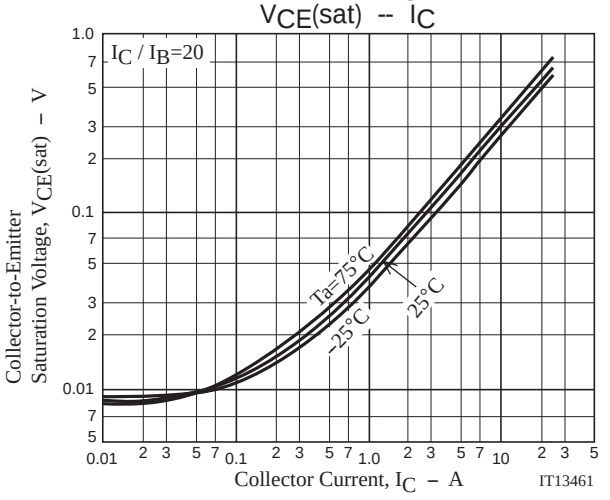

IC – VBE
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
IT13456
VCE=2V
Ta=75°C
25°C
–25°C

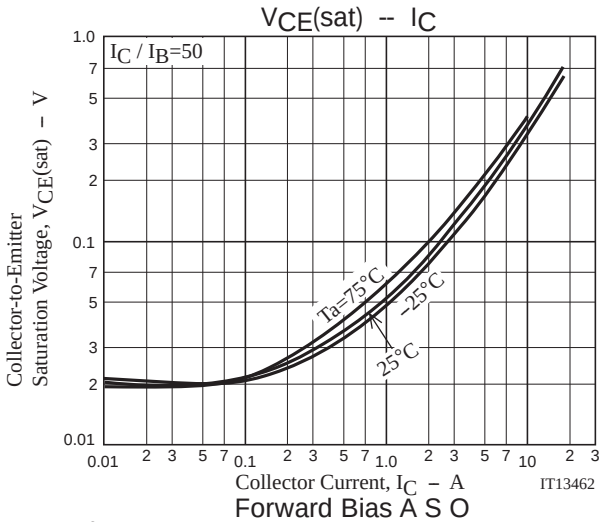

hFE – IC
DC Current Gain, hFE
Collector Current, IC – A
IT13457
VCE=2V
Ta=75°C
25°C
–25°C

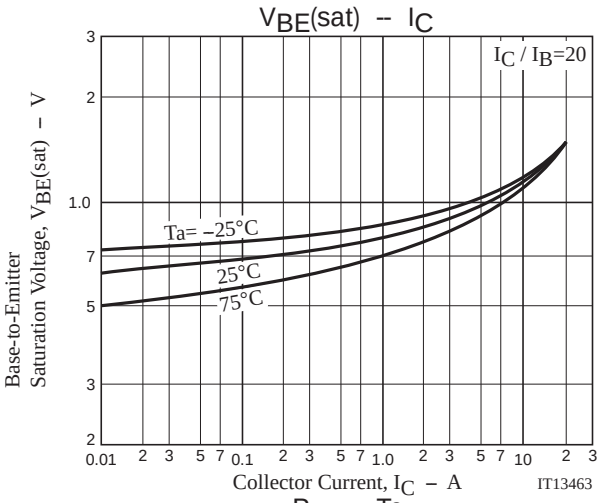

hFE – IC
DC Current Gain, hFE
Collector Current, IC – A
IT13458
Ta=25°C
VCE=2.0V
0.2V
0.5V
0.7V
1.0V

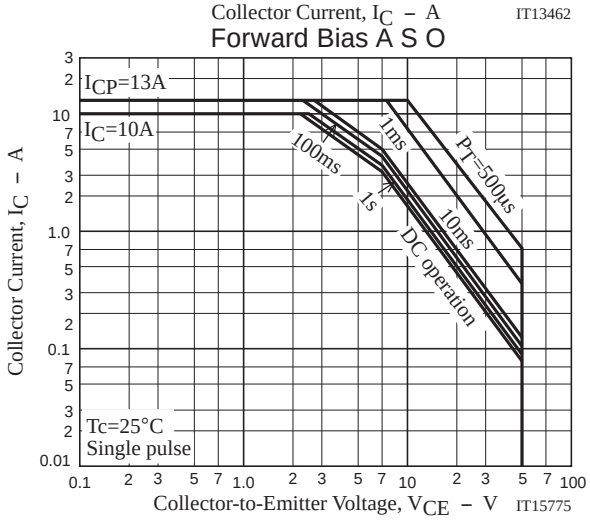

fT – IC
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT13459
VCE=10V

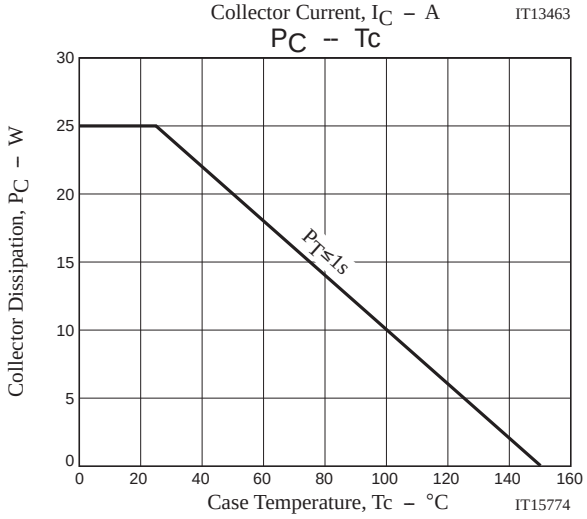

Cob – VCB
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT13460
f=1MHz


VCE(sat) – IC
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT13461
IC / IB=20
Ta=75°C
25°C
–25°C


VCE(sat) -- IC
IC / IB=50
Ta=75°C
–25°C
25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT13462


VBE(sat) -- IC
IC / IB=20
Ta= –25°C
25°C
75°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT13463


Forward Bias A S O
ICP=13A
IC=10A
100ms
1ms
1s
10ms
DC operation
PT=500µs
Tc=25°C
Single pulse
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT15775


PC – Tc
PT≤1s
Collector Dissipation, PC – W
Case Temperature, Tc – °C
IT15774

Magazine Specification

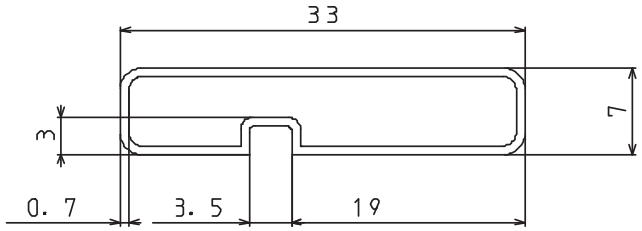
2SC6144SG

1. Packing Format

Package Name	Magazine Name	Maximum Number of devices contained (pcs)			Packing format	
		Magazine	Inner box	Outer box	Inner BOX	Outer BOX
TO-220F-3FS	TO-220F	50	1,000	4,000	SPD-0V0001 20 magazines contained Dimensions:mm (external) 568×150×55	SPT-081029 4 inner boxes contained Dimensions:mm (external) 590×225×178

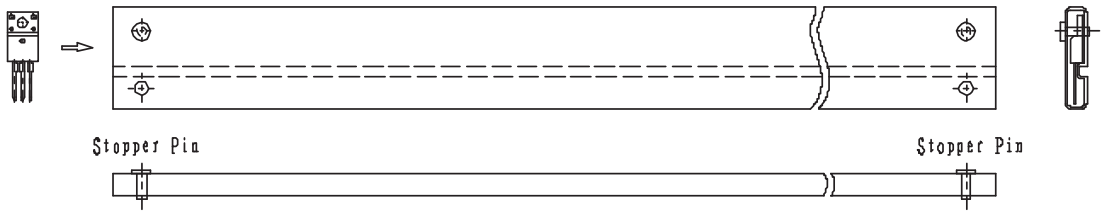
2. Magazine dimensions

(unit:mm)

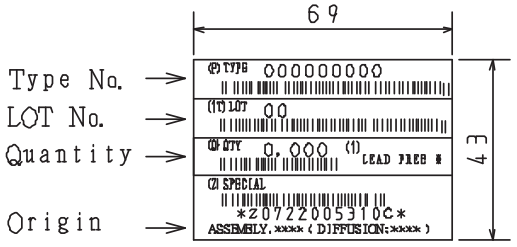


Tolerance=±0.3mm
Thickness=0.7±0.2mm
Length =532.5±2mm
Material =PVC (Antistatic treatment)

3. Storage method to magazine

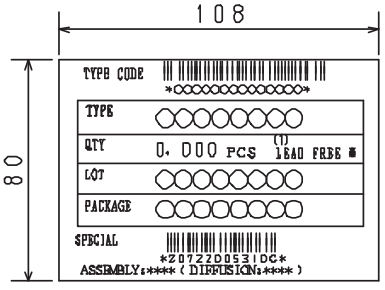


4. Inner box label (unit:mm)



5. Outer box label (unit:mm)

It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

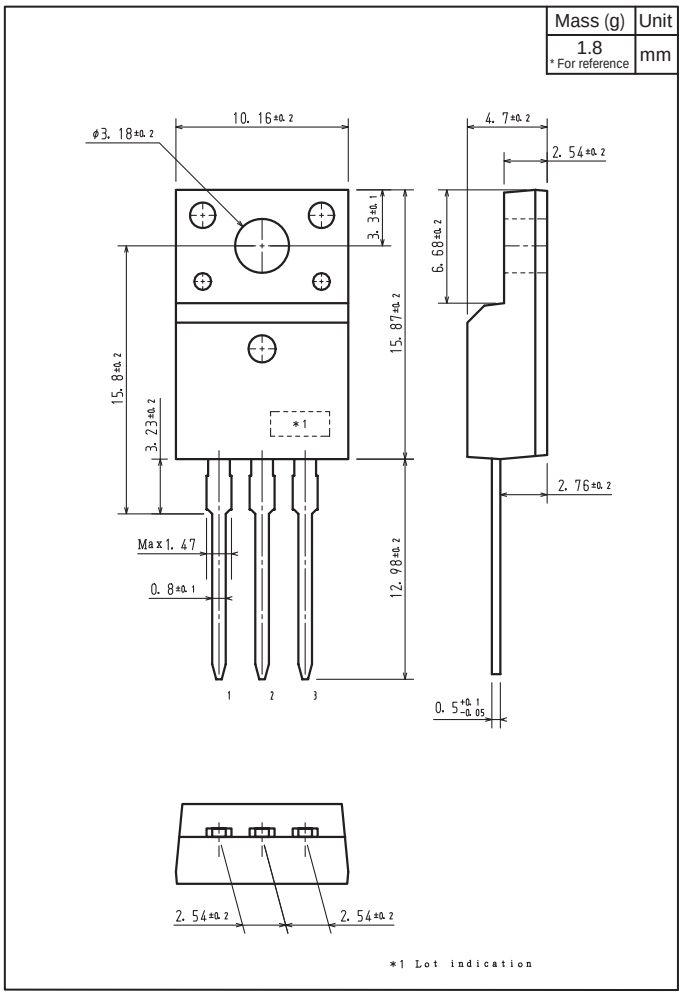


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A

Outline Drawing

2SC6144SG



This catalog provides information as of December, 2012. Specifications and information herein are subject to change without notice.

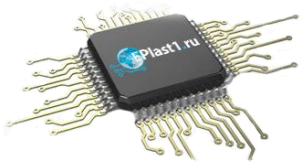
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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