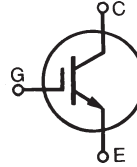


HiPerFAST™ High Speed IGBT C2-Class

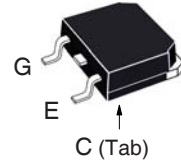
IXGH50N60C2
IXGT50N60C2

V_{CES} = 600V
I_{C110} = 50A
V_{CE(sat)} ≤ 2.7V
t_{fi(typ)} = 48ns

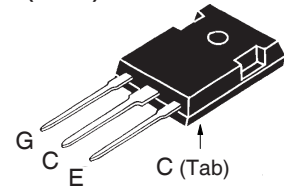


| Symbol | Test Conditions | Maximum Ratings | |
|-------------------------------|--|---|----------|
| V _{CES} | T _J = 25°C to 150°C | 600 | V |
| V _{CGR} | T _J = 25°C to 150°C, R _{GE} = 1MΩ | 600 | V |
| V _{GES} | Continuous | ±20 | V |
| V _{GEM} | Transient | ±30 | V |
| I _{C25} | T _C = 25°C (Limited by Leads) | 75 | A |
| I _{C110} | T _C = 110°C | 50 | A |
| I _{CM} | T _C = 25°C, 1ms | 300 | A |
| SSOA (RBSOA) | V _{GE} = 15V, T _{VJ} = 125°C, R _G = 10Ω Clamped Inductive Load | I _{CM} = 80 @V _{CE} ≤ V _{CES} | A |
| P _C | T _C = 25°C | 400 | W |
| T _J | | -55 ... +150 | °C |
| T _{JM} | | 150 | °C |
| T _{stg} | | -55 ... +150 | °C |
| T _L | Maximum Lead Temperature for Soldering | 300 | °C |
| T _{SOLD} | 1.6 mm (0.062in.) from Case for 10s | 260 | °C |
| M _d | Mounting Torque | 1.13/10 | Nm/lb.in |
| Weight | TO-268 | 4 | g |
| | TO-247 | 6 | g |

TO-268 (IXGT)



TO-247 (IXGH)



G = Gate C = Collector
E = Emitter Tab = Collector

Features

- Very High Frequency IGBT
- Square RBSOA
- High Current Handling Capability
- International Standard Packages

Advantages

- High Power Density
- Low Gate Drive Requirement

Applications

- Switch-Mode and Resonant-Mode Power Supplies
- Uninterruptible Power Supplies (UPS)
- PFC Circuits
- AC Motor Drives
- DC Servo & Robot Drives
- DC Choppers

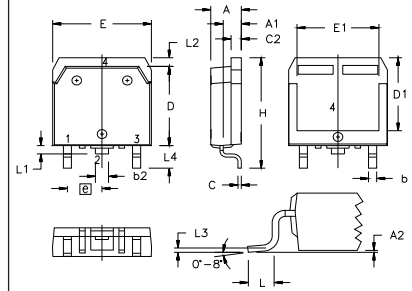
| Symbol | Test Conditions (T _J = 25°C, Unless Otherwise Specified) | Characteristic Values | | |
|----------------------|---|-----------------------|------|---------------|
| | | Min. | Typ. | Max. |
| BV _{CES} | I _C = 250μA, V _{GE} = 0V | 600 | | V |
| V _{GE(th)} | I _C = 250μA, V _{CE} = V _{GE} | 3.0 | | V |
| I _{CES} | V _{CE} = V _{CES} , V _{GE} = 0V T _J = 125°C | | | 50 μA 1 mA |
| I _{GES} | V _{CE} = 0V, V _{GE} = ±20V | | | ±100 nA |
| V _{CE(sat)} | I _C = 40A, V _{GE} = 15V, Note 1 T _J = 125°C | 1.8 | | 2.7 V V |

Symbol Test Conditions
 $(T_J = 25^\circ\text{C Unless Otherwise Specified})$
Characteristic Values

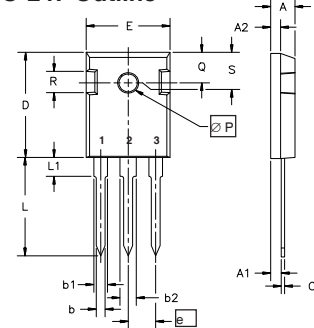
| | | Min. | Typ. | Max. | |
|--------------|--|--------|------|------|--------------------|
| g_{fs} | $I_C = 40\text{A}, V_{CE} = 10\text{V}, \text{Note 1}$ | 40 | 51 | | S |
| C_{ies} | $V_{CE} = 25\text{V}, V_{GE} = 0\text{V}, f = 1\text{MHz}$ | | 3700 | | pF |
| C_{oes} | | | 230 | | pF |
| C_{res} | | | 50 | | pF |
| $Q_{g(on)}$ | $I_C = 40\text{A}, V_{GE} = 15\text{V}, V_{CE} = 0.5 \cdot V_{CES}$ | | 138 | | nC |
| Q_{ge} | | | 25 | | nC |
| Q_{gc} | | | 40 | | nC |
| $t_{d(on)}$ | Inductive load, $T_J = 25^\circ\text{C}$ $I_C = 40\text{A}, V_{GE} = 15\text{V}$ | | 18 | | ns |
| t_{ri} | | | 25 | | ns |
| $t_{d(off)}$ | $V_{CE} = 0.8 \cdot V_{CES}, R_G = 2\Omega$ | | 115 | 150 | ns |
| t_{fi} | | Note 2 | | 48 | |
| E_{off} | | | 0.38 | 0.70 | mJ |
| $t_{d(on)}$ | Inductive load, $T_J = 125^\circ\text{C}$ $I_C = 40\text{A}, V_{GE} = 15\text{V}$ | | 18 | | ns |
| t_{ri} | | | | 25 | |
| E_{on} | $V_{CE} = 0.8 \cdot V_{CES}, R_G = 2\Omega$ | | 1.4 | | mJ |
| $t_{d(off)}$ | | | | 170 | |
| t_{fi} | Note 2 | | 60 | | ns |
| E_{off} | | | 0.74 | | mJ |
| R_{thJC} | | | | 0.31 | $^\circ\text{C/W}$ |
| R_{thCS} | TO-247 | | 0.21 | | $^\circ\text{C/W}$ |

Notes:

1. Pulse test, $t \leq 300\mu\text{s}$, duty cycle, $d \leq 2\%$.
2. Switching times & energy losses may increase for higher $V_{CE}(\text{clamp})$, T_J or R_G .

TO-268 Outline

 Terminals: 1 - Gate, 2, 4 - Collector
 3 - Emitter

| SYM | INCHES | | MILLIMETERS | |
|-----|----------|------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | .193 | .201 | 4.90 | 5.10 |
| A1 | .106 | .114 | 2.70 | 2.90 |
| A2 | .001 | .010 | 0.02 | 0.25 |
| b | .045 | .057 | 1.15 | 1.45 |
| b2 | .075 | .083 | 1.90 | 2.10 |
| C | .016 | .026 | 0.40 | 0.65 |
| C2 | .057 | .063 | 1.45 | 1.60 |
| D | .543 | .551 | 13.80 | 14.00 |
| D1 | .488 | .500 | 12.40 | 12.70 |
| E | .624 | .632 | 15.85 | 16.05 |
| E1 | .524 | .535 | 13.30 | 13.60 |
| e | .215 BSC | | 5.45 BSC | |
| H | .736 | .752 | 18.70 | 19.10 |
| L | .094 | .106 | 2.40 | 2.70 |
| L1 | .047 | .055 | 1.20 | 1.40 |
| L2 | .039 | .045 | 1.00 | 1.15 |
| L3 | .010 BSC | | 0.25 BSC | |
| L4 | .150 | .161 | 3.80 | 4.10 |

TO-247 Outline

 Terminals: 1 - Gate, 2 - Collector
 3 - Emitter

| Dim. | Millimeter | | Inches | |
|----------------|------------|-------|---------|-------|
| | Min. | Max. | Min. | Max. |
| A | 4.7 | 5.3 | .185 | .209 |
| A ₁ | 2.2 | 2.54 | .087 | .102 |
| A ₂ | 2.2 | 2.6 | .059 | .098 |
| b | 1.0 | 1.4 | .040 | .055 |
| b ₁ | 1.65 | 2.13 | .065 | .084 |
| b ₂ | 2.87 | 3.12 | .113 | .123 |
| C | .4 | .8 | .016 | .031 |
| D | 20.80 | 21.46 | .819 | .845 |
| E | 15.75 | 16.26 | .610 | .640 |
| e | 5.20 | 5.72 | 0.205 | 0.225 |
| L | 19.81 | 20.32 | .780 | .800 |
| L1 | | 4.50 | | .177 |
| ∅P | 3.55 | 3.65 | .140 | .144 |
| Q | 5.89 | 6.40 | 0.232 | 0.252 |
| R | 4.32 | 5.49 | .170 | .216 |
| S | 6.15 BSC | | 242 BSC | |

IXYS Reserves the Right to Change Limits, Test Conditions, and Dimensions.

Fig. 1. Output Characteristics

@ $T_J = 25^\circ\text{C}$

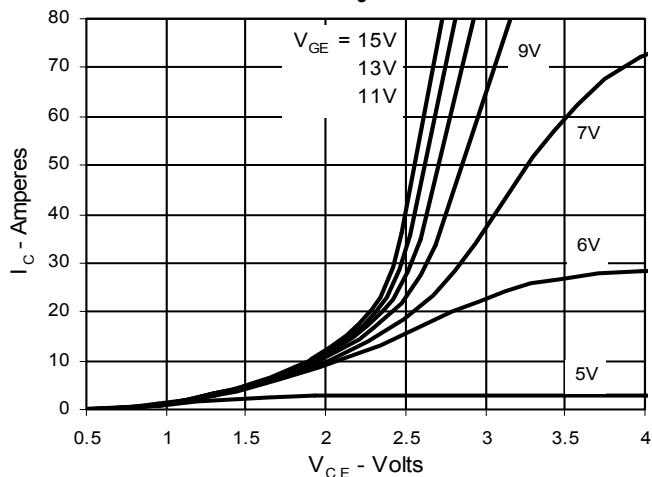


Fig. 2. Extended Output Characteristics

@ $T_J = 25^\circ\text{C}$

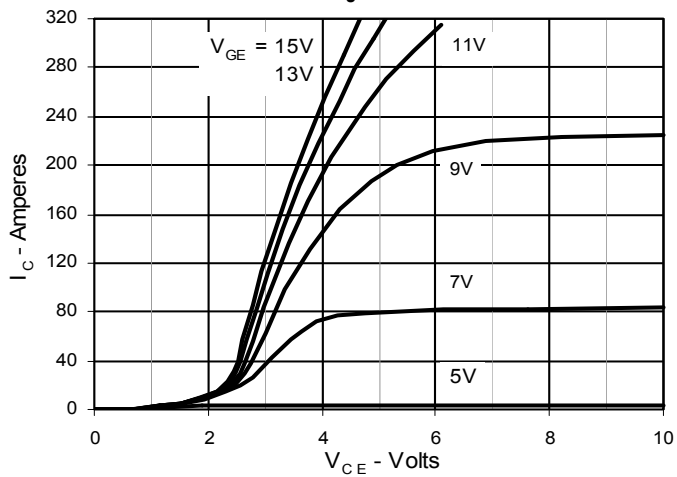


Fig. 3. Output Characteristics

@ $T_J = 125^\circ\text{C}$

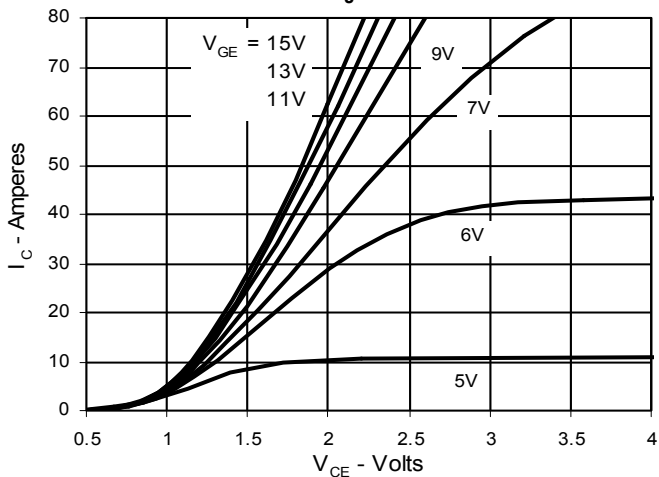


Fig. 4. Dependence of $V_{CE(sat)}$ on Temperature

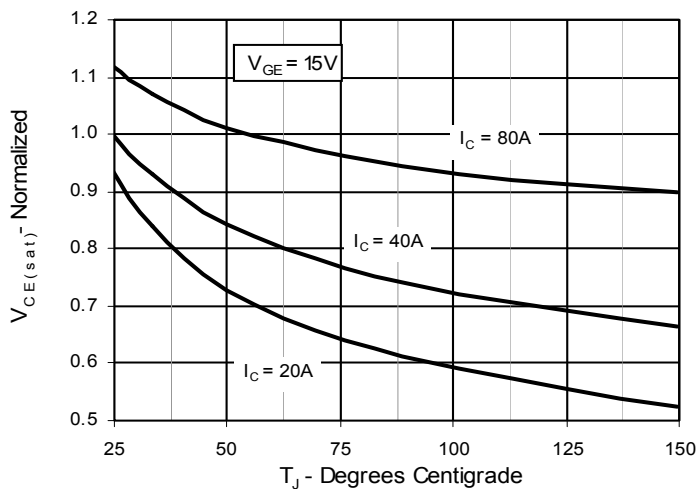


Fig. 5. Collector-to-Emitter Voltage vs. Gate-to-Emitter voltage

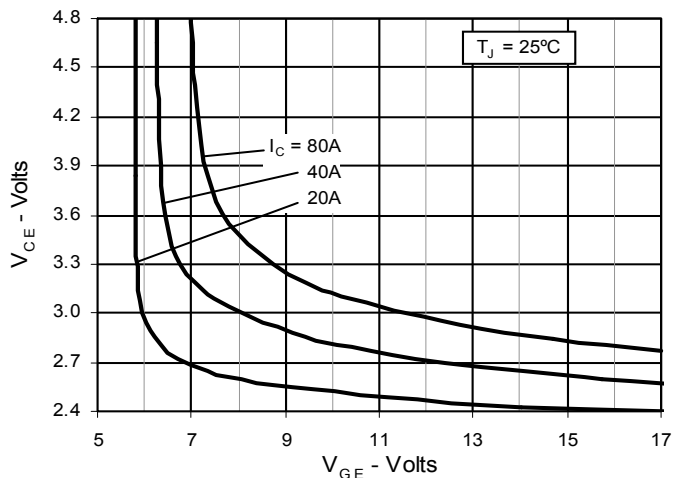


Fig. 6. Input Admittance

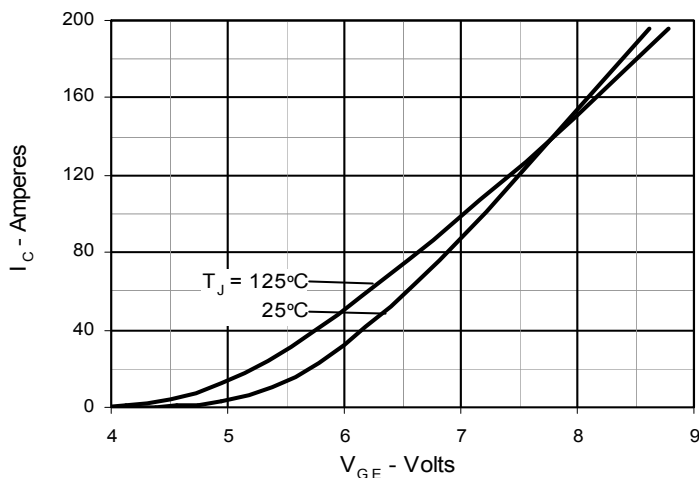


Fig. 7. Transconductance

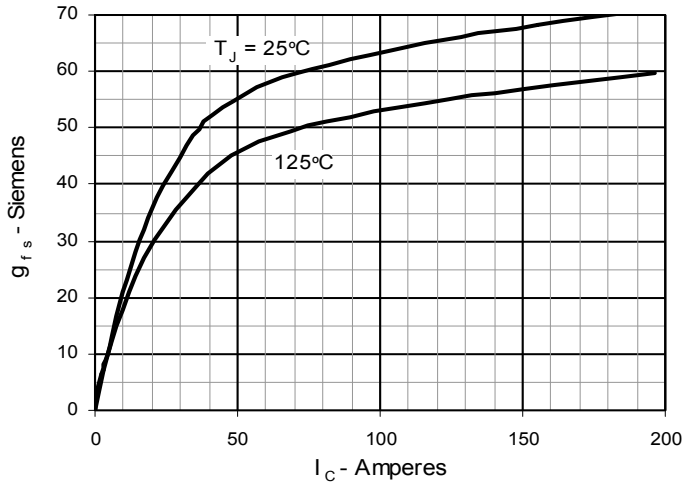


Fig. 8. Dependence of Turn-Off Energy on R_G

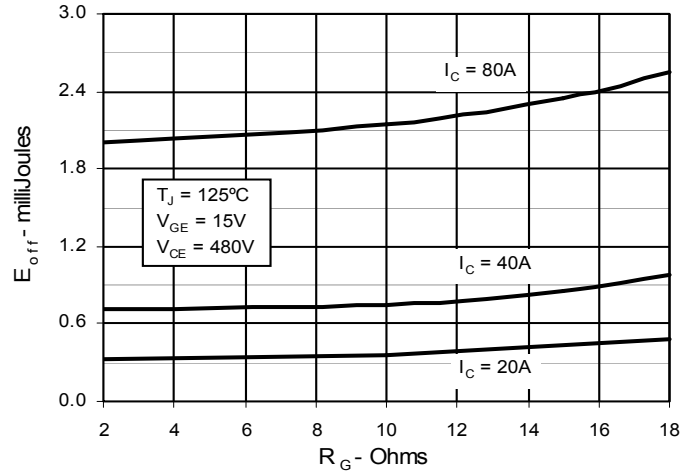


Fig. 9. Dependence of Turn-Off Energy on I_C

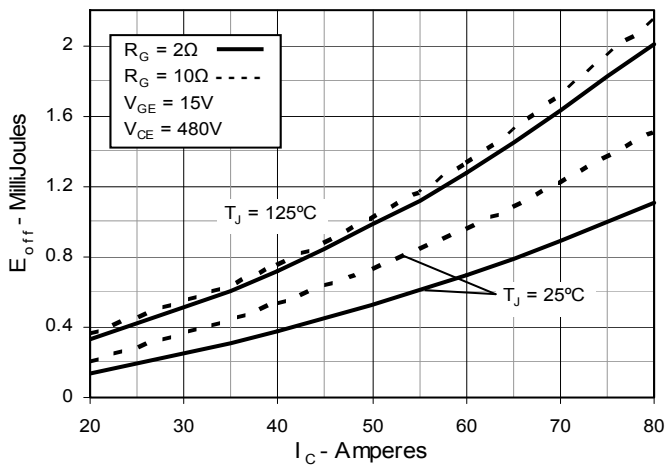


Fig. 10. Dependence of Turn-Off Energy on Temperature

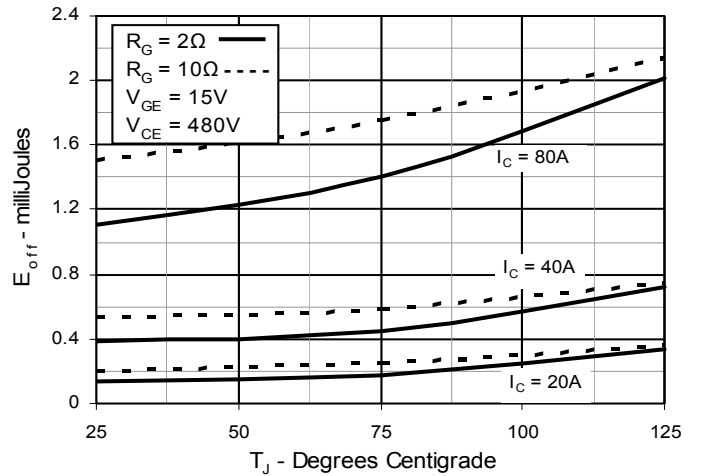


Fig. 11. Dependence of Turn-Off Switching Time on R_G

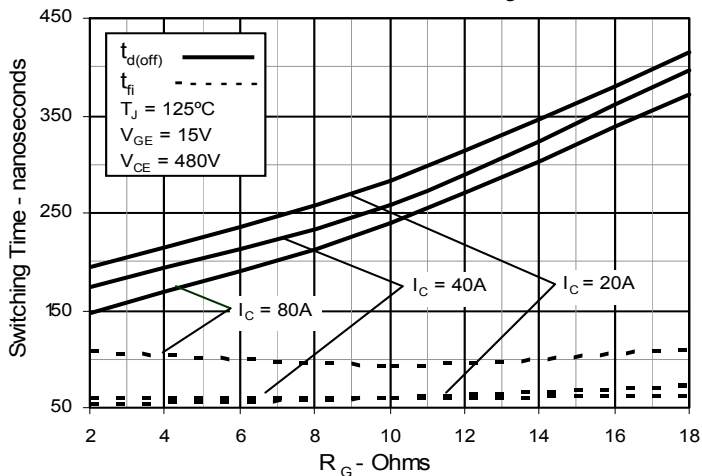


Fig. 12. Dependence of Turn-Off Switching Time on I_C

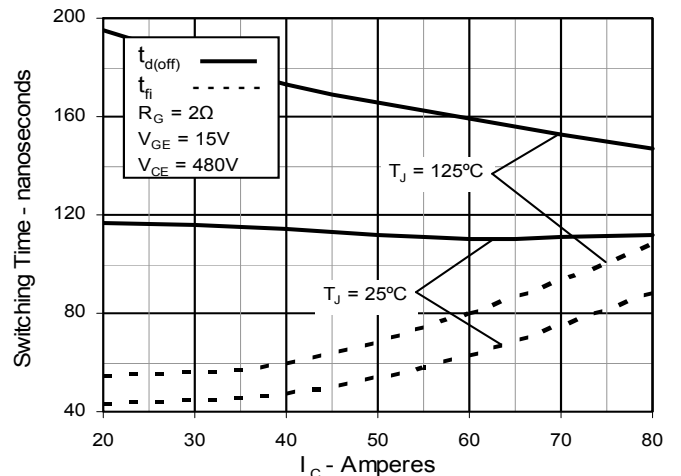


Fig. 13. Dependence of Turn-Off Switching Time on Temperature

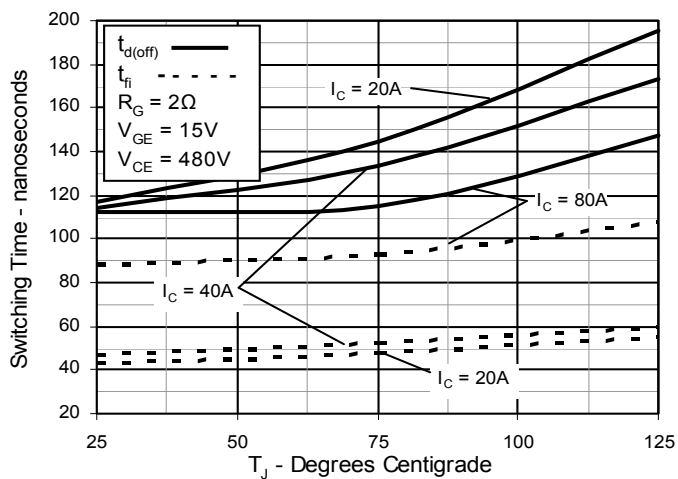


Fig. 14. Reverse-Bias Safe Operating Area

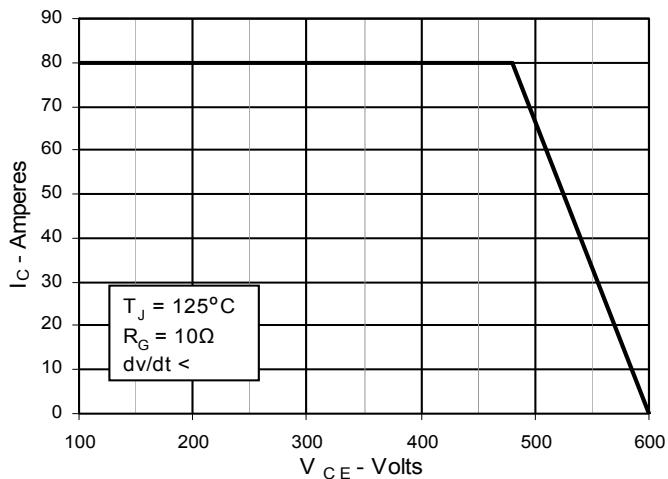


Fig. 15. Gate Charge

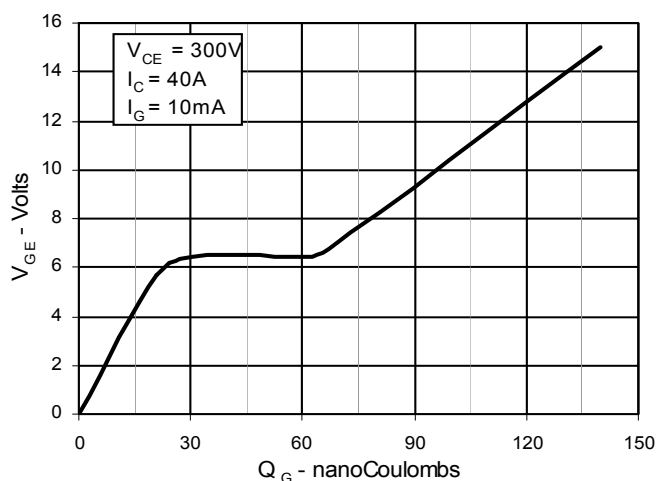


Fig. 16. Capacitance

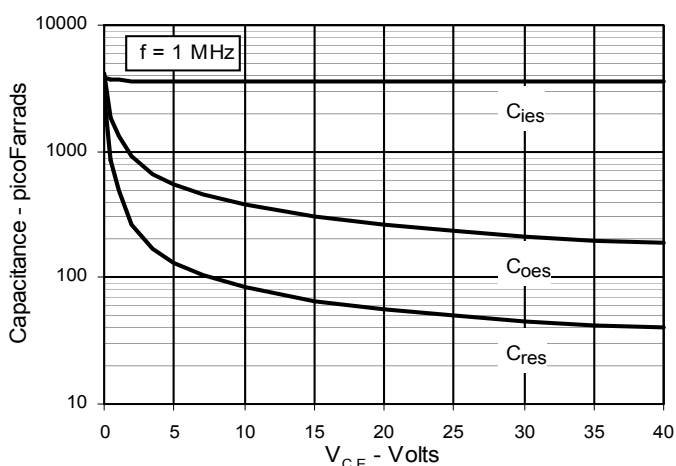
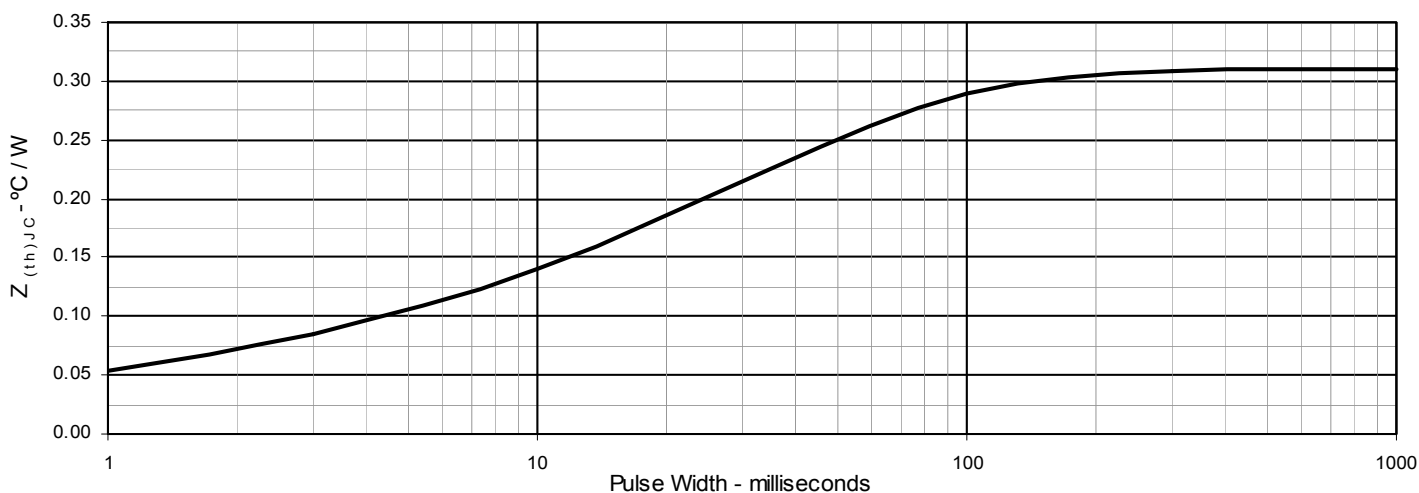


Fig. 17. Maximum Transient Thermal Resistance



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.



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