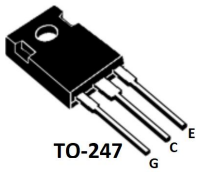
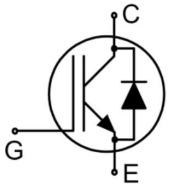
## Features

- Low gate charge
- Trench FS Technology
- RoHS product




## Applications

- General purpose inverters
- Induction heating(IH)
- UPS




## Absolute Ratings（Tc=25℃）

| Parameter | Symbol | | Value | Unit |
|---|---|---|---|---|
| Collector-Emmiter Voltage | $V_{CES}$ | | 1200 | V |
| *Collector Current-continuous | Ic | T=25℃ | 30 | A |
| | | T=100℃ | 15 | A |
| Collector Current-pulse(note 1) | $I_{CM}$ | | 45 | A |
| Diode Continuous forward current | $I_F$ | T=25℃ | 30 | A |
| | | T=100℃ | 15 | |
| Diode Maximum Forward Current (Note 1) | $I_{FM}$ | | 45 | A |
| Gate-Emmiter Voltage | $V_{GES}$ | | ±20 | V |
| Power Dissipation(TO-247) | $P_D$ | $T_C$=25℃ | 238 | W |
| Operating Temperature Range | $T_J$ | | -40~+175 | ℃ |
| Storage Temperature Range | $T_{STG}$ | | -55~+150 | ℃ |
| Maximum Lead Temperature for Soldering Purposes | $T_L$ | | 300 | ℃ |

*Collector current limited by maximum Junction temperature

## Electrical Characteristic(TC=25℃ unless otherwise noted )

| Parameter | Symbol | Tests conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| **Off-Characteristics** | | | | | | |
| Collector-Emmiter Voltage | $BV_{CES}$ | $I_C$=250μA,$V_{GE}$=0V | 1200 | - | - | V |
| Zero Gate Voltage Collector Current | $I_{CES}$ | $V_{CE}$=1200V,$V_{GE}$=0V, $T_C$=25℃ | - | - | 100 | uA |
| | | $T_C$=100℃ | - | - | 2 | mA |

| | | | | | | |
|---|---|---|---|---|---|---|
| Gate-body leakage current,reverse | $I_{GESR}$ | $V_{CE}$=0V,$V_{GE}$=±20V | - | - | ±150 | nA |
| **On-Characteristics** | | | | | | |
| Gate-Emmiter Threshold Voltage | $V_{GE(th)}$ | VCE=VGE, Ic=250uA | 4.5 | - | 6.5 | V |
| Collector-Emmiter saturation Voltage | $V_{CESAT}$ | $V_{GE}$=15V,$I_C$=15A, $T_C$=25℃ | - | 1.6 | 2.1 | V |
| | | $T_C$=125℃ | - | 1.9 | - | V |
| | | $T_C$=150℃ | - | 2.1 | - | V |
| **Dynamic Characteristics** | | | | | | |
| Input capacitance | Cies | VCE=25V, VGE=0V, f=1.0MHZ, | - | 1260 | - | pF |
| Output capacitance | Coes | | - | 78 | - | pF |
| Reverse transfer capacitance | Cres | | - | 41 | - | pF |
| Total Gate Charge | Qg | VCC=960V,IC=15A, VGE=15V [3,4] | - | 112 | - | nC |
| Gate to emitter charge | Qge | | - | 8.8 | - | |
| Gate to collector charge | Qgc | | - | 80.7 | - | |
| **Switching Characteristics** | | | | | | |
| Turn-On delay time | $t_d$(on) | $V_{CE}$=600V,Ic=15A, $R_G$=10Ω,Inductive load Tc=25℃ | - | 10 | - | ns |
| Turn-On rise time | $t_r$ | | - | 34 | - | ns |
| Turn-off delay time | $t_d$(off) | | - | 52 | - | ns |
| Turn-off Fall time | $t_f$ | | - | 174 | - | ns |
| Turn-on energy | $E_{on}$ | | - | 0.38 | - | mJ |
| Turn-off energy | $E_{off}$ | | - | 0.67 | - | mJ |
| Total switching Energy | $E_{tot}$ | | - | 1.05 | - | mJ |
| **Anti-Paraller Diode Characteristics and Maximum Ratings** | | | | | | |
| Diode Forward Voltage | $V_F$ | $V_{GE}$=0V,$I_F$=15A. | - | 1.85 | 2.2 | V |
| Diode Reverse recovery time | $t_{rr}$ | $V_{GE}$=0V,$V_R$=600V, $I_F$=15A $dI_F/dt$=450A/us [4] | - | 283 | - | ns |
| Reverse recovery charge | $Q_{rr}$ | | - | 1180 | - | nC |

## Thermal Characteristics

| Symbol | Parameter | Type | Units |
|---|---|---|---|
| $R_{th\ j\text{-}c}$ | Thermal Resistance, Junction to case | 0.63 | ℃/W |
| $R_{th\ j\text{-}a}$ | Thermal Resistance, Junction to Ambient | 40 | ℃/W |

Notes:

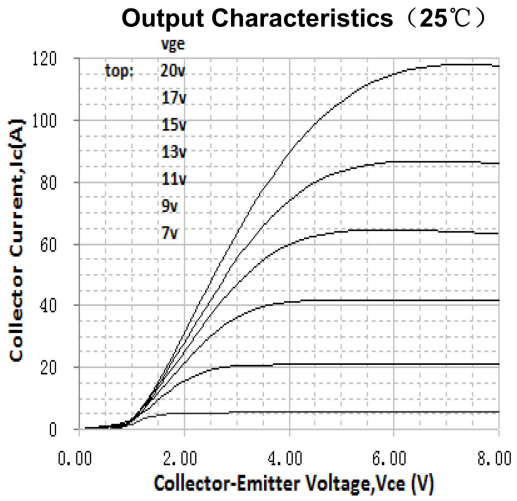
1：Pulse width limited by maximum junction temperature

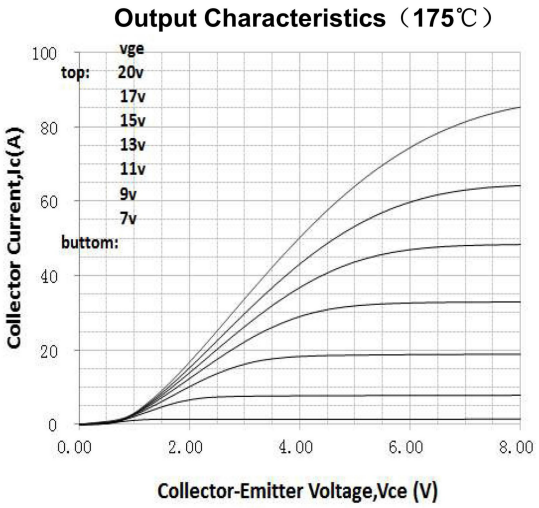
2：Allowed number of short circuits: <1000; time between short circuits: >1s.

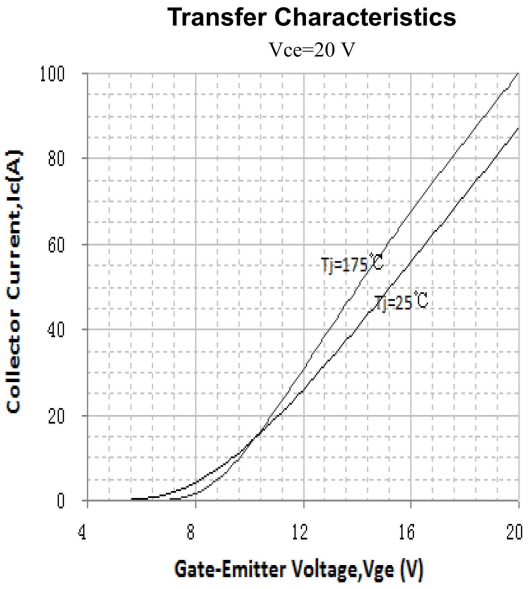
3：Pulse Test：Pulse Width ≤300μs,Duty Cycle≤2%

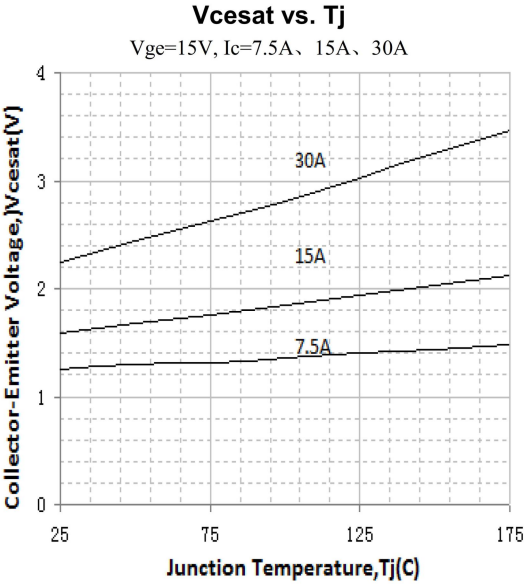
4：Essentially independent of operating temperature

## Electrical Characteristics(curves)



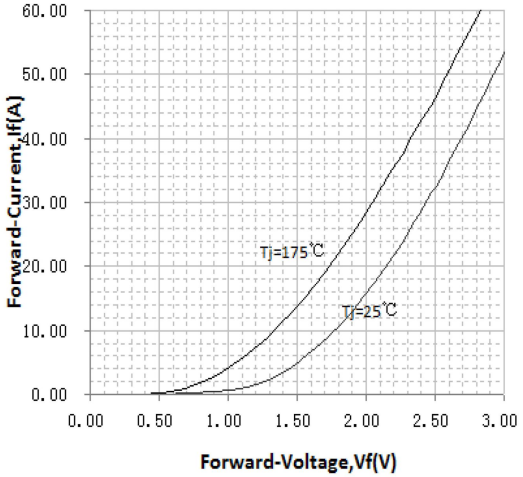



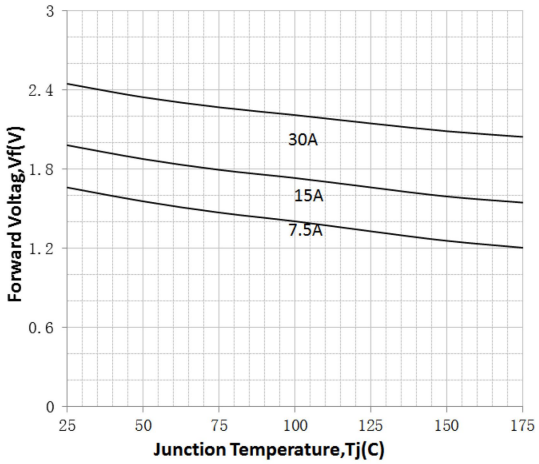
**Diode Characteristic**

Tj=25℃、175℃



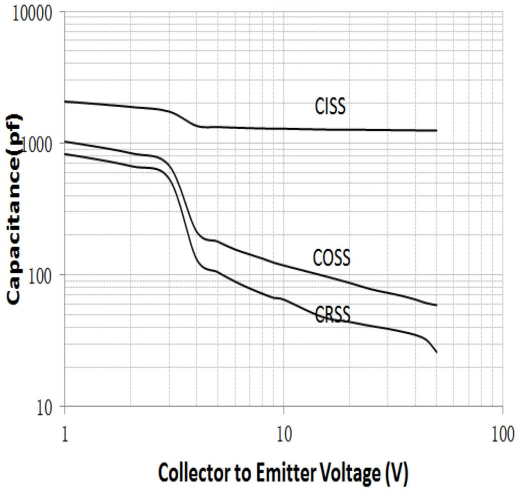

**Vf vs. Tj**

Ic=7.5A、15A、30A



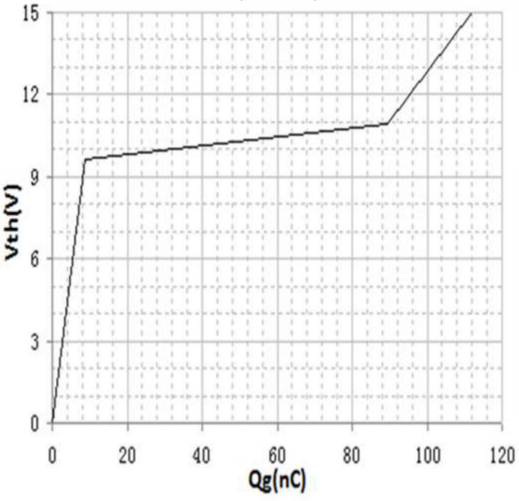

**Capacitance Characteristic**

f=1.0MHZ



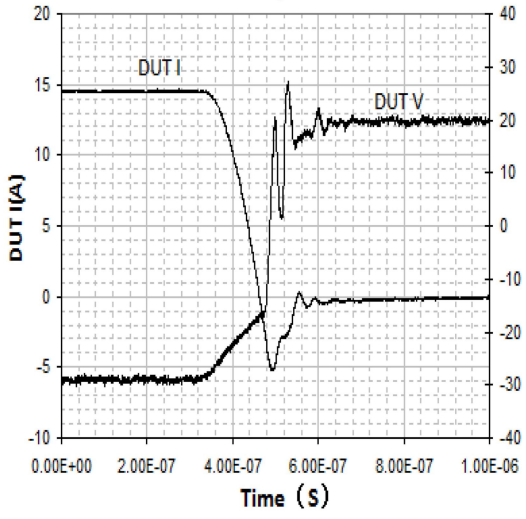

**Gate Charge Characteristics**

VGE=15V,IC=15A,VCE=960V



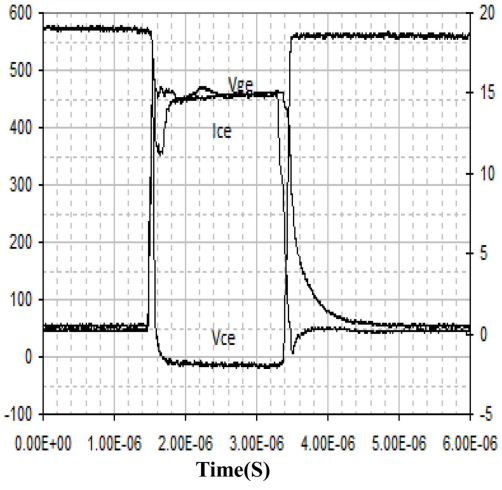

**Diode Peak Reverse Recovery Current**

IF=15A Tj=25℃



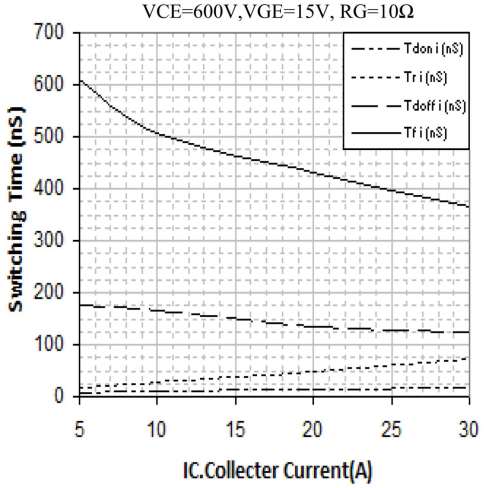

**IGBT Switch**

VGE=15V,IC=15A,VCE=600V,Tj=25℃



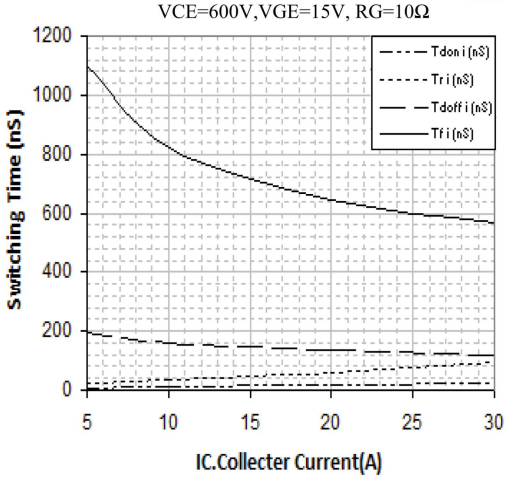
**Switching Time vs. IC(25℃)**

VCE=600V,VGE=15V, RG=10Ω



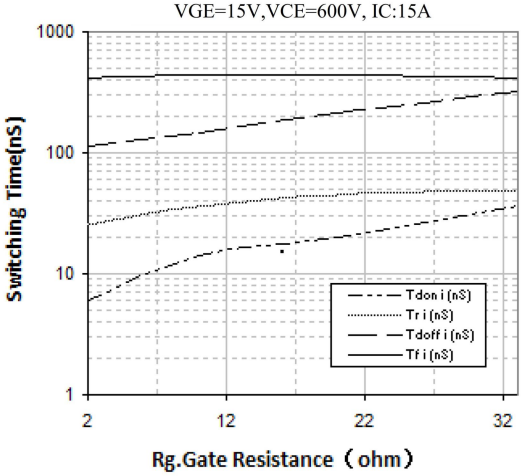

**Switching Time vs. IC(175℃)**

VCE=600V,VGE=15V, RG=10Ω



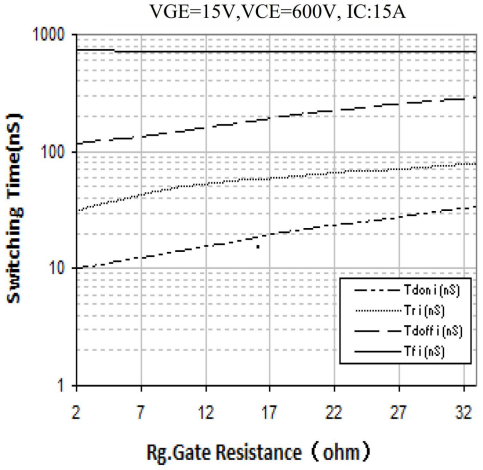

**Switching Time vs. Rg(25℃)**

VGE=15V,VCE=600V, IC:15A



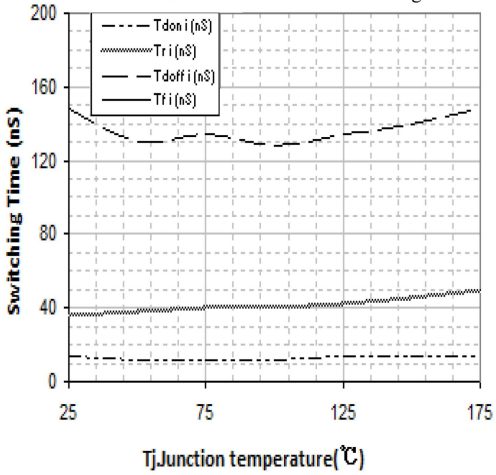

**Switching Time vs. Rg(175℃)**

VGE=15V,VCE=600V, IC:15A



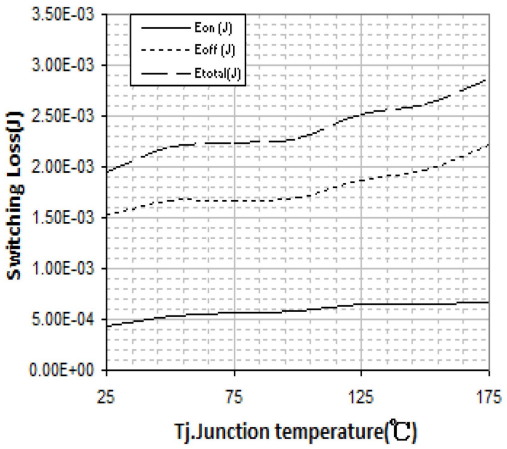

**Switching Time vs.Tj**

VGE=15V，VCE=600V，IC=15A，Rg=10Ω



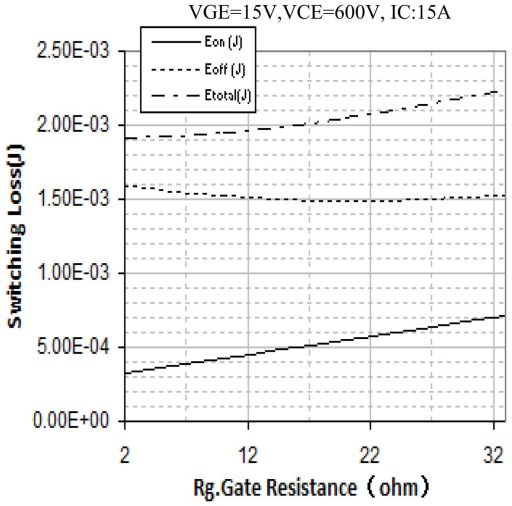

**Switching Loss vs. Tj**

VGE=15V，VCE=600V，IC=15A ，Rg=10Ω



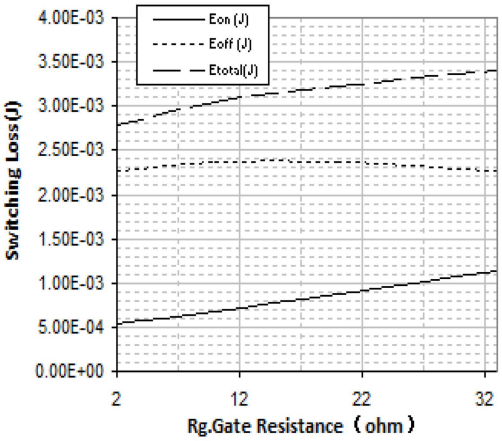
**Switching Loss vs. Rg(25℃)**

VGE=15V,VCE=600V, IC:15A



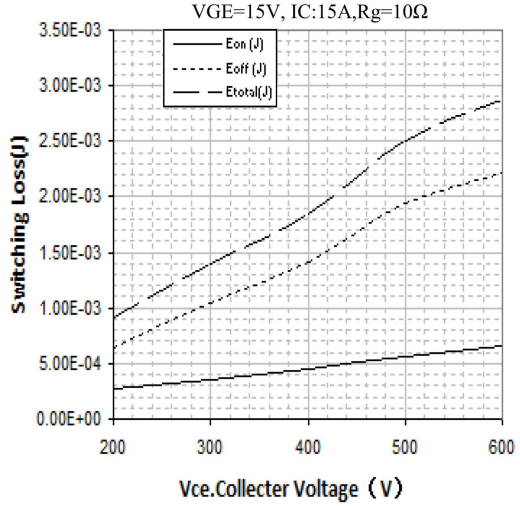

**Switching Loss vs. Rg(175℃)**

VGE=15V,VCE=600V, IC:15A



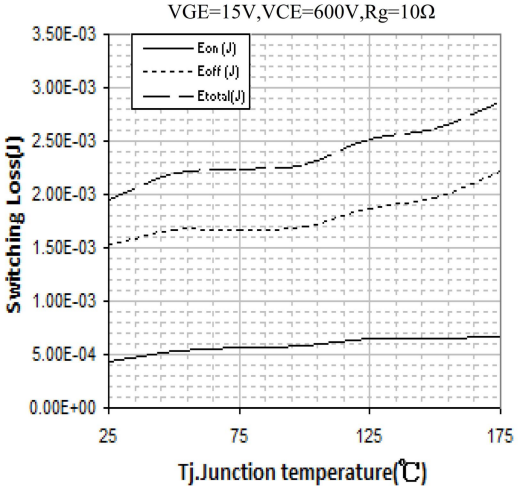

**Switching Loss vs. VCE(175℃)**

VGE=15V, IC:15A,Rg=10Ω



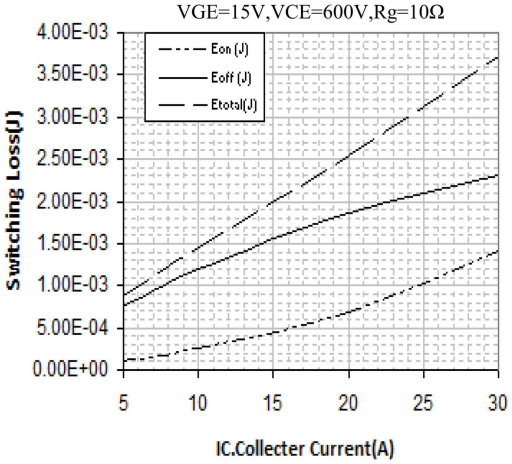

**Switching Loss vs. Tj**

VGE=15V,VCE=600V,Rg=10Ω



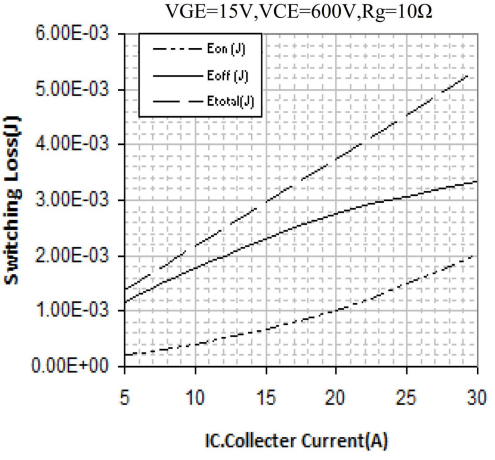

**Switching Loss vs. IC(25℃)**

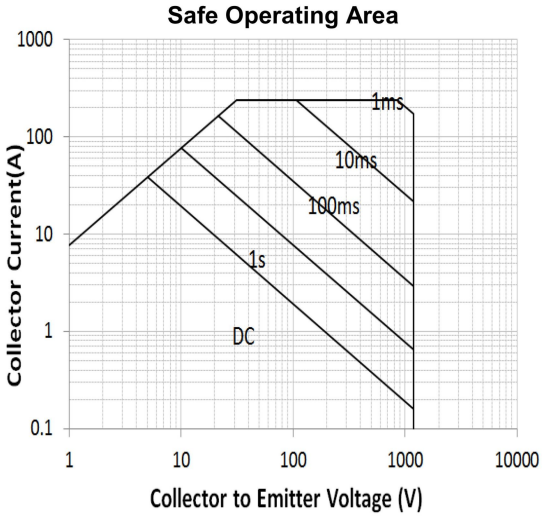
VGE=15V,VCE=600V,Rg=10Ω

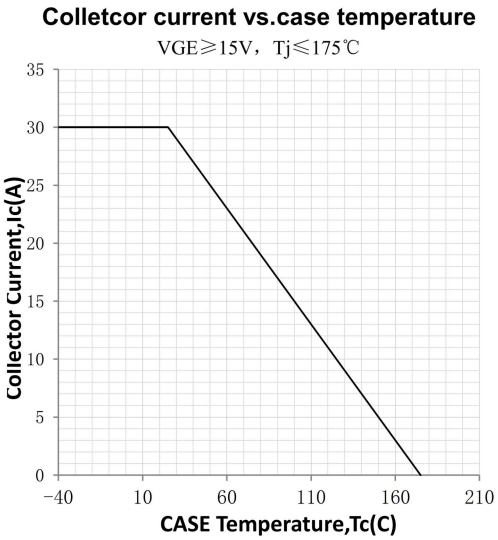



**Switching Loss vs. IC(175℃)**

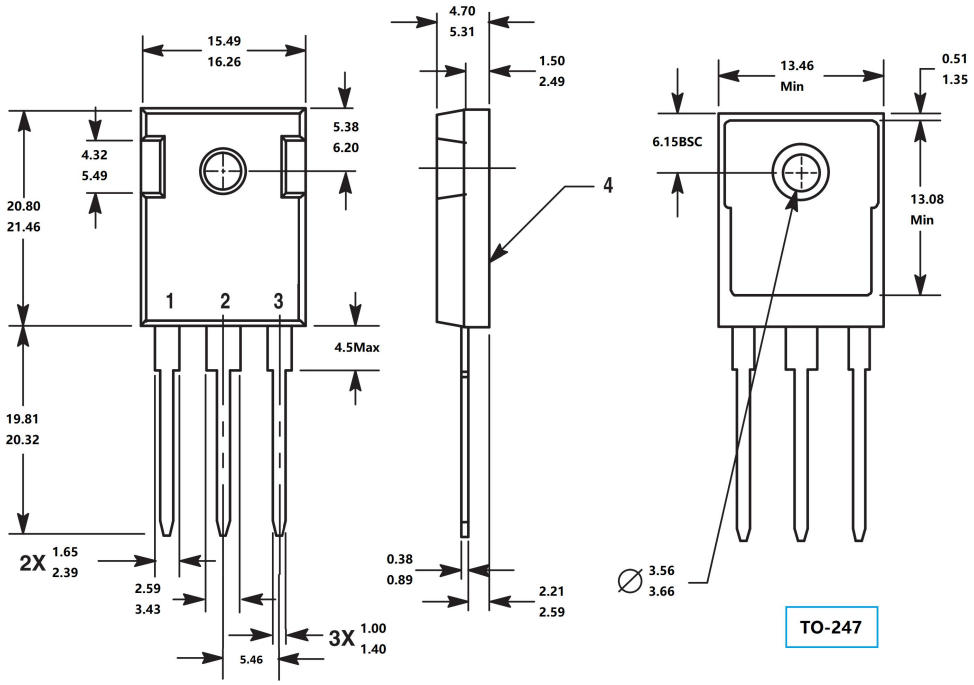
VGE=15V,VCE=600V,Rg=10Ω






## Package Mechanical DATA



ENTEGRECİ

Bu belge www.entegreci.com üzerinden sunulmaktadır.

# Elektronik komponent tedarikinde Entegreci

Entegreci, Eskişehir merkezli, Türkiye geneline satış yapan bir elektronik komponent mağazasıdır. Entegreler (IC), mikrodenetleyiciler, transistörler, diyotlar, pasif elemanlar, konnektörler, modüller ve geliştirme kartları tek adetten seri üretim adetlerine kadar satılır. Ürün sayfalarında güncel stok durumunu, fiyatı ve datasheet bağlantısını bulabilirsiniz.

### Parça koduyla arama

Üretici parça numarasını yazın; stok ve fiyatı hemen görün.

**www.entegreci.com**

### Ürün kategorileri

Entegreden kapasitöre tüm elektronik komponent kategorileri.

**Kategorilere göz atın**

### Üreticiler

Aradığınız üreticinin ürünlerini tek sayfada inceleyin.

**Üreticileri görün**

### Toplu alım ve teklif

Listede olmayan ya da yüksek adetli parçalar için teklif isteyin.

**Teklif isteyin**

**www.entegreci.com** | **destek@entegreci.com** | **0850 305 90 34**

Entegreci is an online electronic components store based in Türkiye. Search by manufacturer part number to see stock, prices and datasheets for integrated circuits, microcontrollers, transistors, passive components and connectors, or request a quote for parts that are not listed.

Bu sayfa Entegreci tarafından eklenmiştir. Belgenin önceki sayfaları asıl yayıncısına aittir ve içeriği değiştirilmemiştir; en güncel sürüm için belgenin yayıncısına başvurun.