JJMICROELECTRONICS

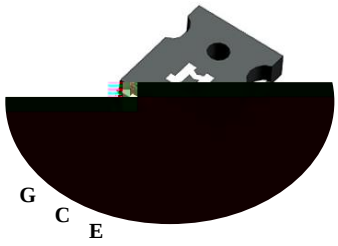
# 650V 40A Trench and Field Stop IGBT

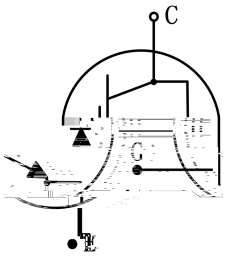
JJT40N65SE

## Key performance:

- $_{CE}$ =650V
- $_{C}$=40A@ $_{C}$=100
- $_{CE(sat)}$=

TO-247




## Features:

- Trench [illegible] technology.
- Positive $V_{CE\ (sat)}$ temperature coefficb ay.

| Symbol | Parameter | Values | Unit |
|---|---|---|---|
| CES | Collector-emitter voltage | 650 | V |
| GES | Gate-emitter voltage | ±20 | V |
| C | Continuous collector current ( C=25 ) | 80 | A |
| | Continuous collector current ( C=100 ) | 40 | A |
| CM | Pulsed collector current, p limited by vjmax | 160 | A |
| F | Diode continuous forward current ( C=100 ) | 40 | A |
| FM | Diode maximum current, p limited by vjmax | 160 | A |
| sc | Short circuit withstand time | 8 | µs |
| tot | Power dissipation ( C=25 ) | 300 | W |
| | Power dissipation ) | | |

| Symbol | Parameter | Test condition | Values | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |

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## Typical performance characteristics

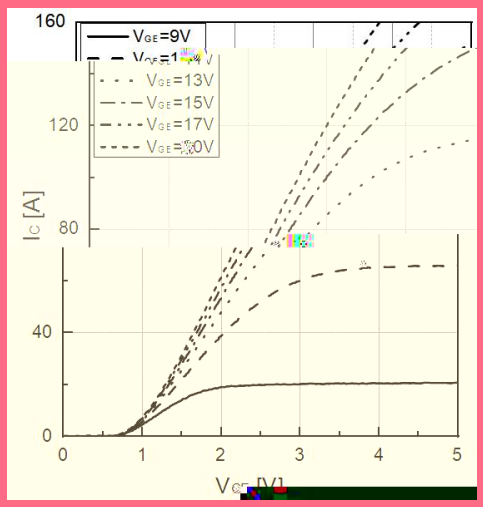



Fig 1. Typical output characteristic ( vj=25 )

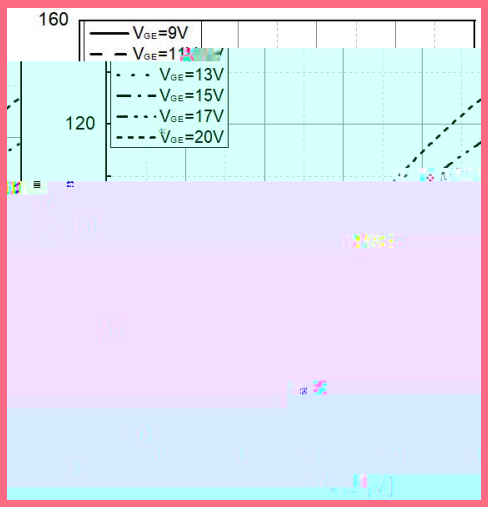



Fig 2. Typical output characteristic( vj=175 )

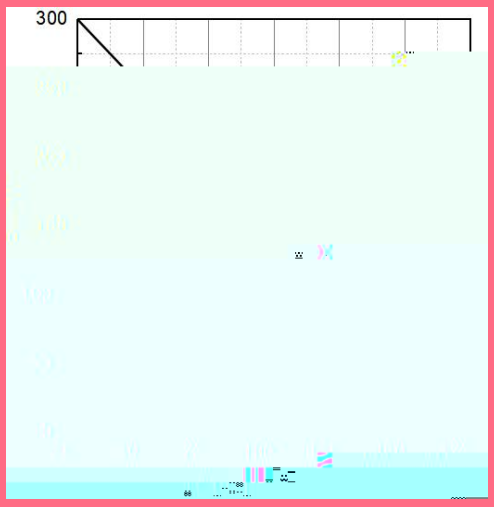



Fig 3. Power dissipation as a function of

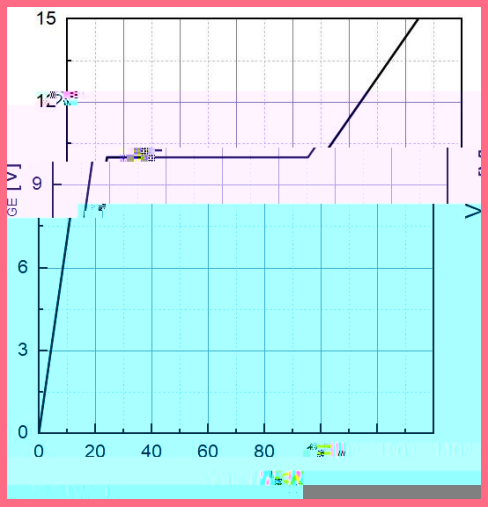



Fig 4. Typical Gate charge

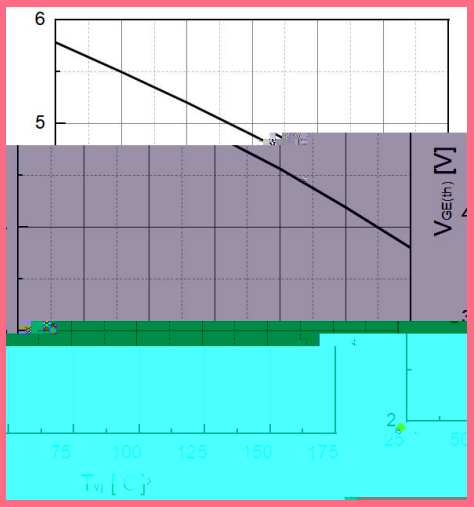



Fig 5. Typical GE(th) as a function of vj ( C=1mA)

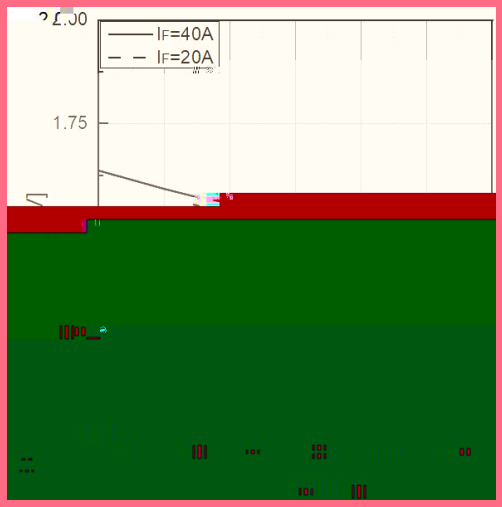



Fig 6. Typical F as a function of vj

## Typical performance characteristics

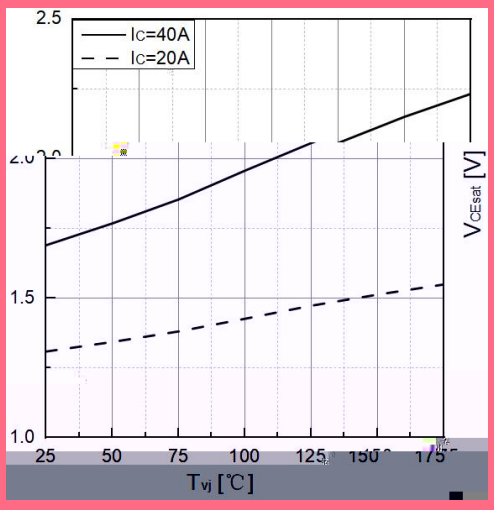



Fig 7. Typical $_{CEsat}$ as a function of $_{vj}$

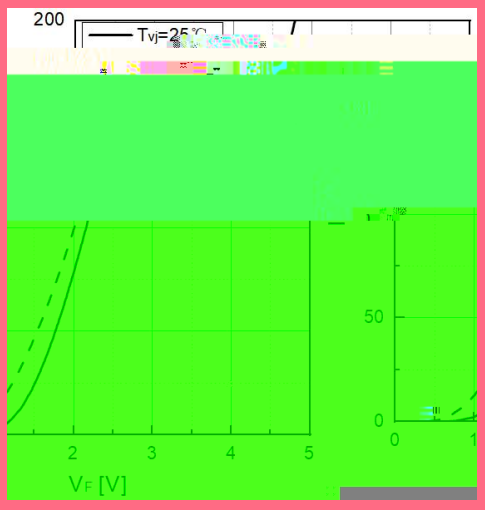



Fig 8. Typical $_{F}$ as a function of $_{F}$

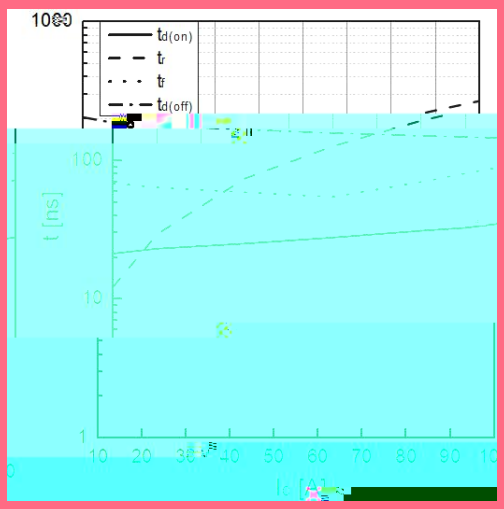



Fig 9. Typical switching time as a function of $_{C}$

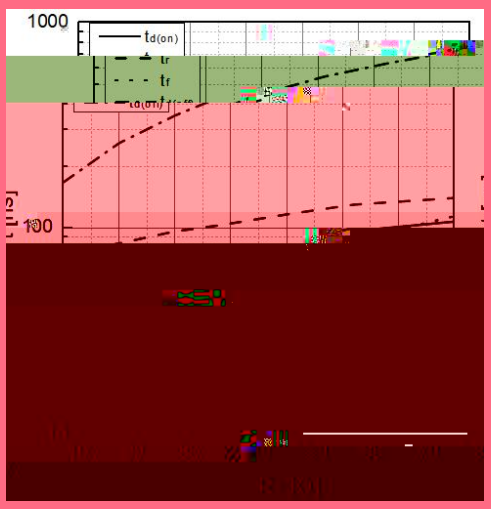



Fig 10. Typical switching time as a function of $_{G}$

## Typical performance characteristics

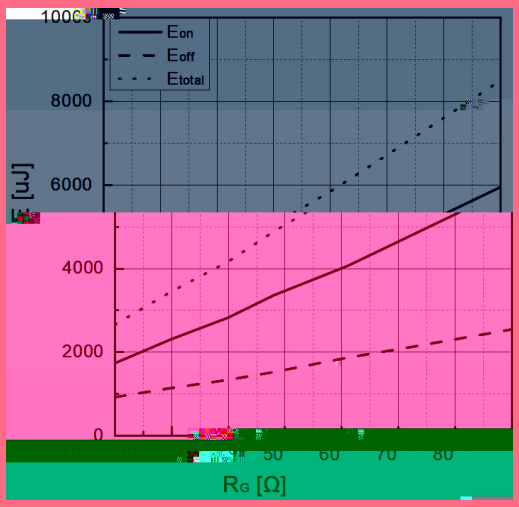



Fig 13. Typical switching energy losses as a function of $_G$

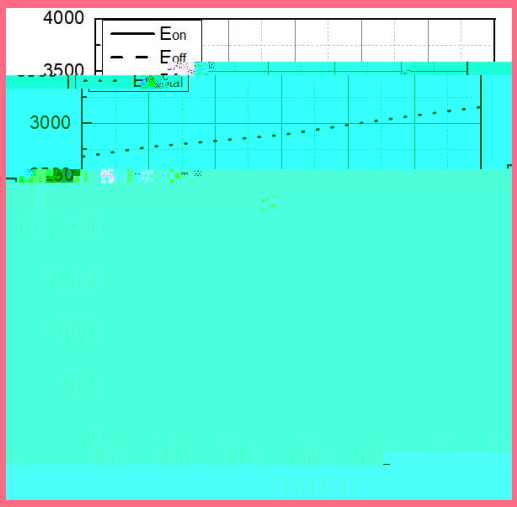



Fig 14. Typical switching energy losses as a function of



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| | | |
|---|---|---|
| | Revisi | Cha |
| 2025-05-05 | Rev 1.0 | Prel ary Release of the datasheet |
| 2025-11-30 | Rev 1.1 | Release of the Characterization |
| 2026-06-25 | Rev 1.2 | Update thermal |

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