

600V UFS Series IGBTs

E_{OFF}

Typical at $T_J = +150^\circ C$

$I_{CE} = I_{C110}$, and $V_{CE(PK)} = 480V$

$V_{CE(SAT)}$

Maximum at $T_J = +25^\circ C$

$I_{CE} = I_{C110}$, and $V_{GE} = 15V$

| I_C AT 110°C | TO-251AA (D-PAK) | | | | TO-252AA (D-PAK) | | | |
|-------------------|--------------------------|--------------------------|----------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|
| | 600V 275ns UFS | 600V 200ns UFS | 600V RUGGED UFS | 600V 275ns UFS | 600V 200ns UFS | 600V RUGGED UFS | 600V 275ns UFS | 600V RUGGED UFS |
| 3A | HGTD3N60C3 2.0V 245µJ | HGTD3N60B3 2.0V 200µJ | HGTD3N60C3R 2.3V TBD µJ | HGTD3N60C3S 2.0V 245µJ | HGTD3N60B3S 2.0V 200µJ | HGTD3N60C3RS 2.3V TBD µJ | HGTD3N60C3RS 2.3V TBD µJ | HGTD3N60C3RS 2.3V TBD µJ |
| 7A | HGTD7N60C3 2.0V 600µJ | HGTD7N60B3 2.0V 350µJ | HGTD7N60C3R 2.3V TBD µJ | HGTD7N60C3S 2.0V 600µJ | HGTD7N60B3S 2.0V 350µJ | HGTD7N60C3RS 2.3V TBD µJ | HGTD7N60C3RS 2.3V TBD µJ | HGTD7N60C3RS 2.3V TBD µJ |

| I_C AT 110°C | TO-262AA (D ² -PAK) | | | | TO-263AB (D ² -PAK) | | | | TO-220AB | | | |
|-------------------|--------------------------------|-----------------------------|------------------------------|------------------------------|--------------------------------|-------------------------------|------------------------------|-----------------------------|------------------------------|------------------------------|-----------------------------|-------------------------------|
| | 600V 275ns UFS | 600V 200ns UFS | 600V RUGGED UFS | 600V 275ns UFS | 600V 200ns UFS | 600V RUGGED UFS | 600V 275ns UFS | 600V 200ns UFS | 600V RUGGED UFS | 600V 275ns UFS | 600V 200ns UFS | 600V RUGGED UFS |
| 3A | HGT1S3N60C3D 2.0V 245µJ | HGT1S3N60B3D 2.0V 200µJ | HGT1S3N60C3DR 2.3V TBD µJ | HGT1S3N60C3DS 2.0V 245µJ | HGT1S3N60B3DS 2.0V 200µJ | HGT1S3N60C3DRS 2.3V TBD µJ | HGT1S3N60C3DS 2.0V 245µJ | HGT1S3N60B3D 2.0V 200µJ | HGT1S3N60C3DR 2.3V TBD µJ | HGT1S3N60C3DS 2.0V 245µJ | HGT1S3N60B3D 2.0V 200µJ | HGT1S3N60C3DR 2.3V TBD µJ |
| 7A | HGT1S7N60C3D 2.0V 600µJ | HGT1S7N60B3D 2.0V 350µJ | HGT1S7N60C3DR 2.3V TBD µJ | HGT1S7N60C3DS 2.0V 600µJ | HGT1S7N60B3DS 2.0V 350µJ | HGT1S7N60C3DRS 2.3V TBD µJ | HGT1S7N60C3DS 2.0V 600µJ | HGT1S7N60B3D 2.0V 350µJ | HGT1S7N60C3DR 2.3V TBD µJ | HGT1S7N60C3DS 2.0V 600µJ | HGT1S7N60B3D 2.0V 350µJ | HGT1S7N60C3DR 2.3V TBD µJ |
| 12A | HGT1S12N60C3 2.0V 900µJ | HGT1S12N60B3 2.0V 800µJ | HGT1S12N60C3R 2.3V TBD µJ | HGT1S12N60C3S 2.0V 900µJ | HGT1S12N60B3S 2.0V 800µJ | HGT1S12N60C3RS 2.3V TBD µJ | HGT1S12N60C3S 2.0V 900µJ | HGT1S12N60B3 2.0V 800µJ | HGT1S12N60C3R 2.3V TBD µJ | HGT1S12N60C3S 2.0V 900µJ | HGT1S12N60B3 2.0V 800µJ | HGT1S12N60C3RS 2.3V TBD µJ |
| 20A | HGT1S20N60C3 1.8V 1500µJ | HGT1S20N60B3 2.0V 1050µJ | HGT1S20N60C3R 2.3V TBD µJ | HGT1S20N60C3S 1.8V 1500µJ | HGT1S20N60B3S 2.0V 1050µJ | HGT1S20N60C3RS 2.3V TBD µJ | HGT1S20N60C3S 1.8V 1500µJ | HGT1S20N60B3 2.0V 1050µJ | HGT1S20N60C3R 2.3V TBD µJ | HGT1S20N60C3S 1.8V 1500µJ | HGT1S20N60B3 2.0V 1050µJ | HGT1S20N60C3RS 2.3V TBD µJ |

| I_C AT 110°C | TO-247 | | | | TO-264 | | | | TO-264 | | | |
|-------------------|----------------------------|----------------------------|------------------------------|-----------------------------|-----------------------------|-------------------------------|-----------------------------|----------------------------|------------------------------|-----------------------------|-----------------------------|-------------------------------|
| | 600V 275ns UFS | 600V 200ns UFS | 600V RUGGED UFS | 600V 275ns UFS | 600V 200ns UFS | 600V RUGGED UFS | 600V 275ns UFS | 600V 200ns UFS | 600V RUGGED UFS | 600V 275ns UFS | 600V 200ns UFS | 600V RUGGED UFS |
| 12A | HGTG12N60C3D 2.0V 900µJ | HGTG12N60B3D 2.0V 800µJ | HGTG12N60C3DR 2.3V TBD µJ | HGTG12N60C3DS 2.0V 900µJ | HGTG12N60B3DS 2.0V 800µJ | HGTG12N60C3DRS 2.3V TBD µJ | HGTG12N60C3DS 2.0V 900µJ | HGTG12N60B3D 2.0V 800µJ | HGTG12N60C3DR 2.3V TBD µJ | HGTG12N60C3DS 2.0V 900µJ | HGTG12N60B3DS 2.0V 800µJ | HGTG12N60C3DRS 2.3V TBD µJ |
| 20A | HGTG20N60C3 1.8V 1500µJ | HGTG20N60B3 2.0V 1050µJ | HGTG20N60C3R 2.3V TBD µJ | HGTG20N60C3S 1.8V 1500µJ | HGTG20N60B3S 2.0V 1050µJ | HGTG20N60C3RS 2.3V TBD µJ | HGTG20N60C3S 1.8V 1500µJ | HGTG20N60B3 2.0V 1050µJ | HGTG20N60C3R 2.3V TBD µJ | HGTG20N60C3S 1.8V 1500µJ | HGTG20N60B3S 2.0V 1050µJ | HGTG20N60C3RS 2.3V TBD µJ |
| 30A | HGTG30N60C3 1.8V 2500µJ | HGTG30N60B3 2.2V 1700µJ | HGTG30N60C3R 2.3V TBD µJ | HGTG30N60C3S 1.8V 2500µJ | HGTG30N60B3S 2.2V 1700µJ | HGTG30N60C3RS 2.3V TBD µJ | HGTG30N60C3S 1.8V 2500µJ | HGTG30N60B3 2.2V 1700µJ | HGTG30N60C3R 2.3V TBD µJ | HGTG30N60C3S 1.8V 2500µJ | HGTG30N60B3S 2.2V 1700µJ | HGTG30N60C3RS 2.3V TBD µJ |
| 40A | HGTG40N60C3 1.6V 3300µJ | HGTG40N60B3 2.0V 2500µJ | HGTG40N60C3R 2.3V TBD µJ | HGTG40N60C3S 1.6V 3300µJ | HGTG40N60B3S 2.0V 2500µJ | HGTG40N60C3RS 2.3V TBD µJ | HGTG40N60C3S 1.6V 3300µJ | HGTG40N60B3 2.0V 2500µJ | HGTG40N60C3R 2.3V TBD µJ | HGTG40N60C3S 1.6V 3300µJ | HGTG40N60B3S 2.0V 2500µJ | HGTG40N60C3DR 2.3V TBD µJ |

PART NOMENCLATURE

HGT - G - 12 - N - 60 - C - 3 - D

OPTIONS

- L: Logic Level Gate
- D: Integral Reverse Diode
- S: Surface Mount
- C: Current Sense
- V: Voltage Clamping
- R: Rugged IGBT
- 1: First Generation
- 2: Second Generation
- 3: Third Generation

MAX FALL TIME AT

- T_J = +150°C
- A: 100ns E: ≤1µs
- B: 200ns F: ≤2µs
- C: 500ns G: ≤5µs
- D: 750ns

PACKAGE

- D: 3 Lead TO-251/TO-252
- 1S: 3 Lead TO-262/TO-263
- P: 3 Lead TO-220
- G: 3 Lead TO-247
- 1Y: 3 Lead TO-264

CONTINUOUS CURRENT

Rating at T_C = +110°C

POLARITY

N-Channel or P-Channel

VOLTAGE BREAKDOWN/V₁₀

i.e. (60, 120)

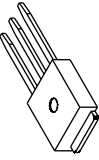
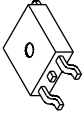
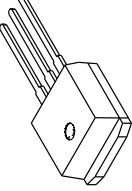
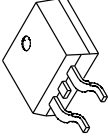
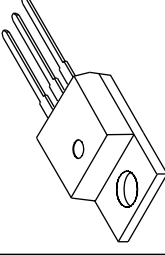
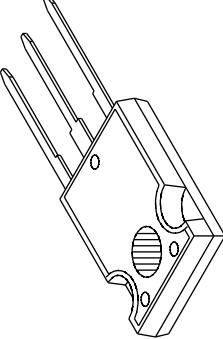
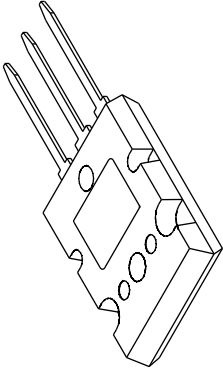
1200V UFS Series IGBTs

$V_{CE(SAT)}$

Maximum at $T_J = +25^\circ C$
 $I_{CE} = I_{C110}$, and $V_{GE} = 15V$

E_{OFF}

Typical at $T_J = +150^\circ C$
 $I_{CE} = I_{C110}$, and $V_{CE(PK)} = 960V$

| I_C AT 110°C |  |  |  |  |  |  |  |
|-------------------|---|---|---|---|--|---|---|
| | 1200V 400ns UFS | 1200V 400ns UFS | 1200V 400ns UFS | 1200V 400ns UFS | 1200V 400ns UFS | 1200V 400ns UFS | 1200V 400ns UFS |
| 3A | HGTD3N120C3 3.0V TBD μJ | HGTD3N120C3S 3.0V TBD μJ | HGT1S3N120C3D 3.0V TBD μJ | HGT1S3N120C3DS 3.0V TBD μJ | HGTP3N120C3D 3.0V TBD μJ | | |
| 5A | HGTD5N120C3 3.0V TBD μJ | HGTD5N120C3S 3.0V TBD μJ | HGT1S5N120C3D 3.0V TBD μJ | HGT1S5N120C3DS 3.0V TBD μJ | HGTP5N120C3D 3.0V TBD μJ | | |
| 10A | | | HGT1S10N120C3 HGT1S10N120C3D 3.0V 3200 μJ | HGT1S10N120C3S HGT1S10N120C3SD 3.0V 3200 μJ | HGTP10N120C3 HGTP10N120C3D 3.0V 3200 μJ | HGTG10N120C3D 3.0V 3200 μJ | |
| 15A | | | HGT1S15N120C3 3.0V 4700 μJ | HGT1S15N120C3S 3.0V 4700 μJ | HGTP15N120C3 3.0V 4700 μJ | HGTG15N120C3, HGTG15N120C3D 3.0V 4700 μJ | |
| 20A | | | | | | HGTG20N120C3, HGTG20N120C3D 3.0V 6300 μJ | |
| 30A | | | | | | HGTG30N120C3 3.0V 9400 μJ | HGT1Y30N120C3D 3.0V 9400 μJ |

1200V 300ns UFS and Rugged UFS products to be offered in the future.

ITALICS = Future Product Offerings