

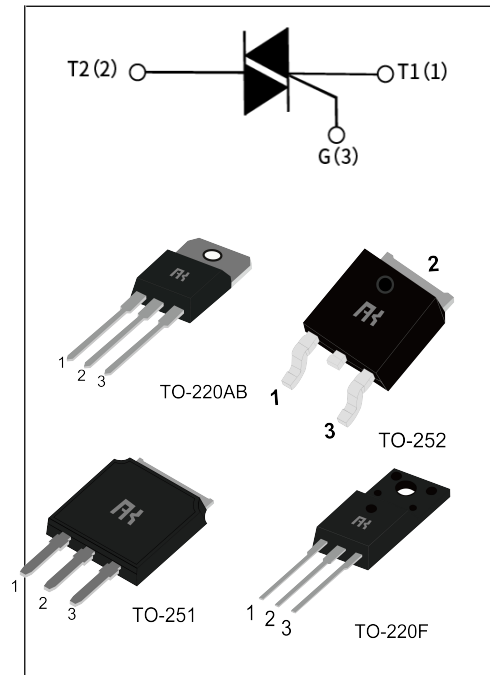
T6xxH series High junction temperatur TRIACS

GENERAL DESCRIPTION :

High current density due to single mesa technology; Glass Passivation.guaranteed maximum junction temperature 150°C
 T6xxH series triacs are suitable for general purpose AC switching. They can be used as an ON/OFF Function in applications such as static relays, heating regulation motor starting circuits...or for phase control operation light dimmers, motor speed controllers.T6xxH series are 3 Quadrants triacs.They are specially recommended for use on inductive loads.

Main Features:

| | | |
|--------------|-------------------|---------------|
| $I_{T(RMS)}$ | V_{DRM}/V_{RRM} | V_{TM} |
| 6 A | 600V and 800 V | ≤ 1.55 V |



Absolute Ratings(limiting values) :

| Symbol | Parameter | | Value | Unit |
|--------------|---|--------------------------|-----------------|------------------|
| T_{stg} | Storage junction temperature range | | - 40 to + 150 | °C |
| T_j | Operating junction temperature range | | - 40 to +150 | °C |
| $I_{T(RMS)}$ | RMS on-state current | TO-220A/F(Ins) (TC=96°C) | 6 | A |
| | | TO-220B (TC=107°C) | | |
| | | TO-251/252 (TC=100°C) | | |
| I_{TSM} | Non repetitive surge peak on-state current (full cycle, F=50Hz) | | 60 | A |
| V_{DRM} | Repetitive peak off-state voltage($T_j = 25^\circ\text{C}$) | | 600 and 800 | V |
| V_{RRM} | Repetitive peak reverse voltage($T_j = 25^\circ\text{C}$) | | 600 and 800 | V |
| V_{DSM} | Non repetitive surge peak Off-state voltage | | $V_{DRM} + 100$ | V |
| V_{RSM} | Non repetitive peak reverse voltage | | $V_{RRM} + 100$ | V |
| I^2t | I^2t value for fusing $t_p = 10$ ms | | 21 | A ² s |

| | | | |
|--------------------------|---|----|------------|
| dI/dt | Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$) | 50 | A/ μ s |
| I_{GM} | Peak gate current | 2 | A |
| P_{G(AV)} | Average gate power dissipation | 1 | W |
| P_{GM} | Peak gate power | 5 | W |

Electrical Characteristics : (T_j=25°C unless otherwise specified)

| Symbol | Test Condition | Quadrant | Range | Value | | | | Unit |
|----------------------------|---|----------|-------|-------|-------|-------|-------|------------|
| | | | | T610H | T620H | T635H | T650H | |
| I_{GT} | V _D =12V R _L =33Ω | I-II-III | MAX | 10 | 20 | 35 | 50 | mA |
| V_{GT} | | I-II-III | MAX | 1.5 | | | | V |
| V_{GD} | V _D =V _{DRM} R _L =3.3kΩ T _j =150°C | I-II-III | MIN | 0.2 | | | | V |
| I_L | I _G =1.2 I _{GT} | I-III | MAX | 15 | 40 | 50 | 70 | mA |
| | | II | | 25 | 55 | 70 | 100 | |
| I_H | I _{TM} = 100mA | | MAX | 15 | 30 | 45 | 60 | mA |
| dV/dt | V _D =2/3V _{DRM} Gate Open T _j =150°C | | MIN | 200 | 500 | 1000 | 1500 | V/ μ s |
| (dV/dt)_c | V _D =400V T _j =150°C (dI/dt) _c =-2.6A/ms | | MIN | 2 | 5 | 15 | 20 | V/ μ s |

Static Characteristics

| Symbol | Parameter | Value(MAX) | Unit | |
|--|---|-----------------------|------|---------|
| V_{TM} | I _{TM} =8.5A t _p = 380 μ s | T _j =25°C | 1.55 | V |
| I_{DRM} I_{RRM} | V _D =V _{DRM} , V _R =V _{RRM} | T _j =25°C | 5 | μ A |
| | | T _j =150°C | 1.5 | mA |

Thermal Resistances :

| Symbol | Parameter | Value | Unit | |
|----------------------------|-------------------------|--------------------------|------|------|
| R_{th(j-c)} | Junction to case for AC | TO-220A/F(Ins) (TC=96°C) | 2.8 | °C/W |
| | | TO-220B (TC=107°C) | 1.8 | |
| | | TO-251/252 (TC=100°C) | 1.9 | |

FIG.1:Maximum power dissipation versus RMS on-state current(full cycle)

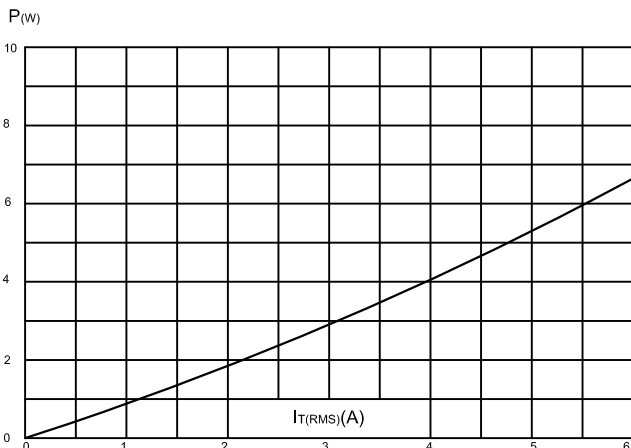


FIG.2:RMS on-state current versus case temperature(full cycle)

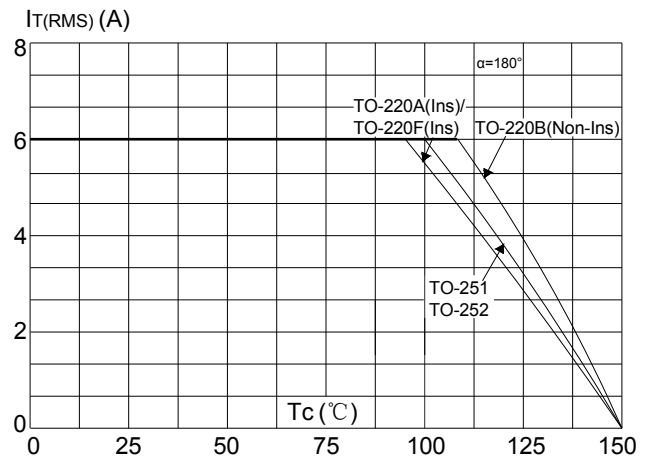


FIG.3:On-state characteristics (maximum values).

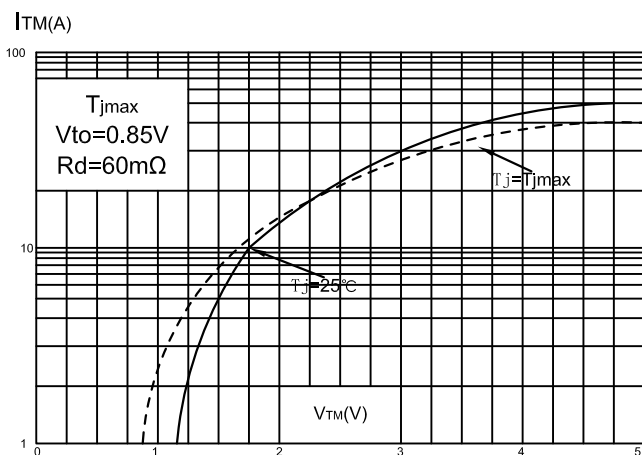


FIG.4:Surge peak on-state current versus number of cycles.

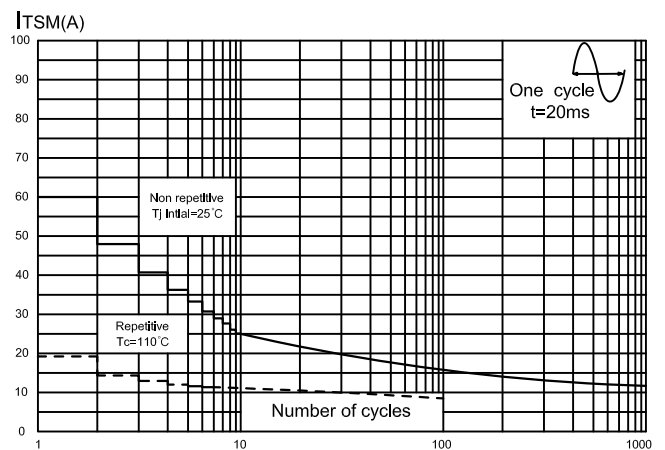


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t .

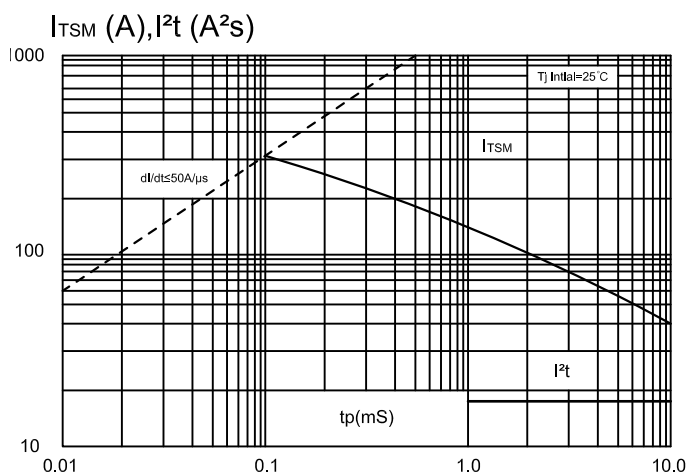
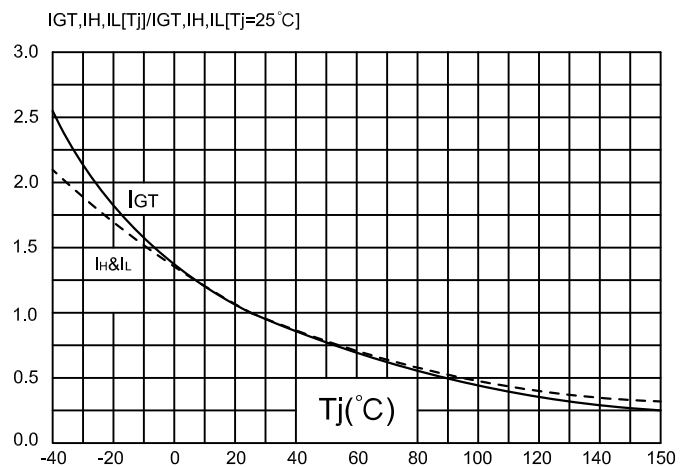
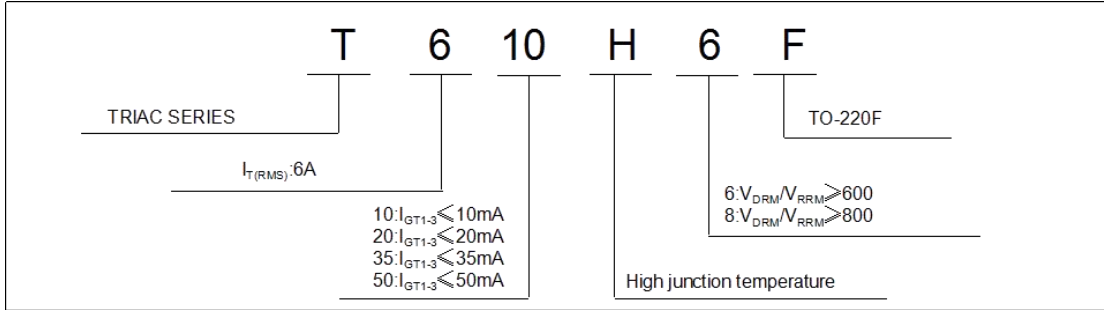


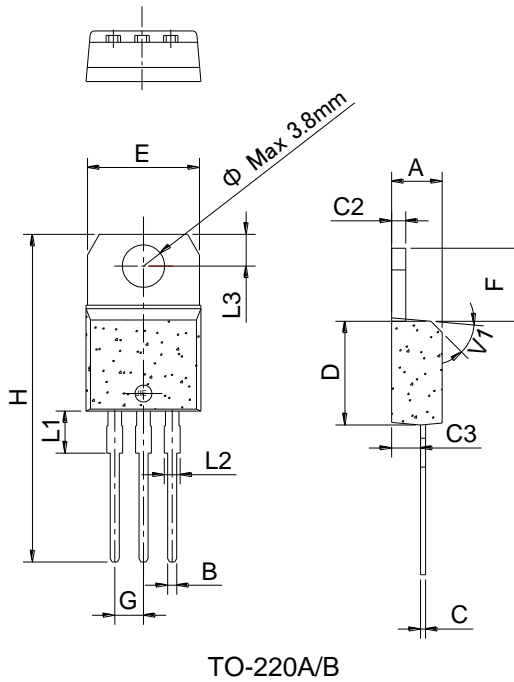
FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)



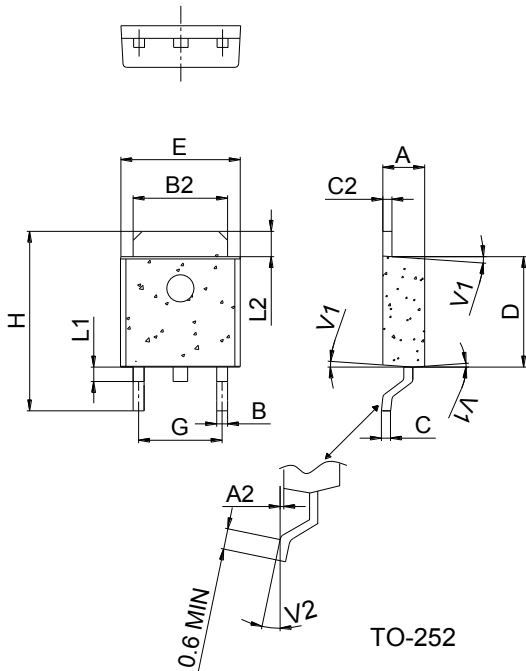
Ordering Information:



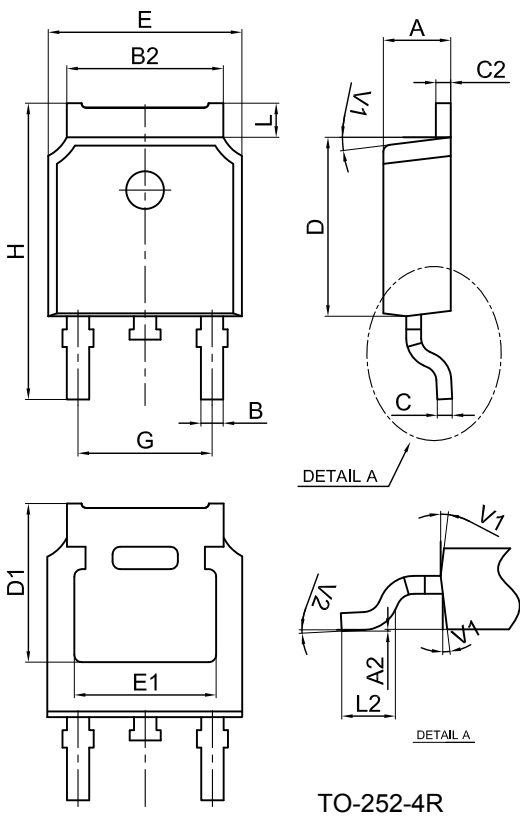
Package Mechanical Data :



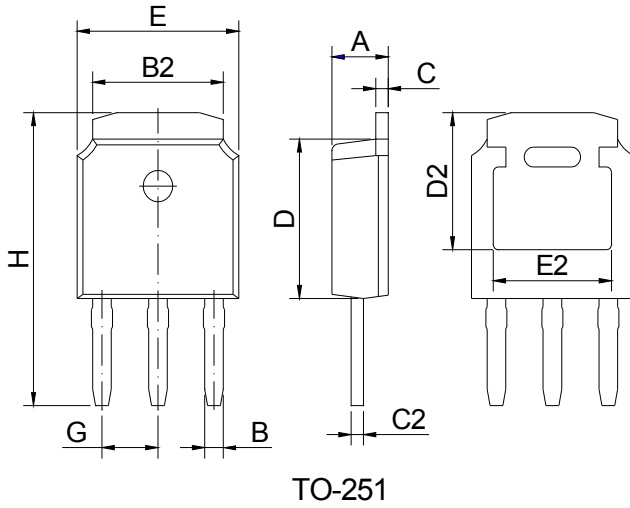
| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.40 | | 4.60 | 0.173 | | 0.181 |
| B | 0.61 | | 0.88 | 0.024 | | 0.035 |
| C | 0.46 | | 0.70 | 0.018 | | 0.028 |
| C2 | 1.21 | | 1.32 | 0.048 | | 0.052 |
| C3 | 2.40 | | 2.72 | 0.094 | | 0.107 |
| D | 8.60 | | 9.70 | 0.339 | | 0.382 |
| E | 9.60 | | 10.4 | 0.378 | | 0.409 |
| F | 6.20 | | 6.60 | 0.244 | | 0.260 |
| G | | 2.54 | | | 0.1 | |
| H | 28.0 | | 29.8 | 1.102 | | 1.173 |
| L1 | | 3.75 | | | 0.148 | |
| L2 | 1.14 | | 1.70 | 0.045 | | 0.067 |
| L3 | 2.65 | | 2.95 | 0.104 | | 0.116 |
| V1 | | 45° | | | 45° | |



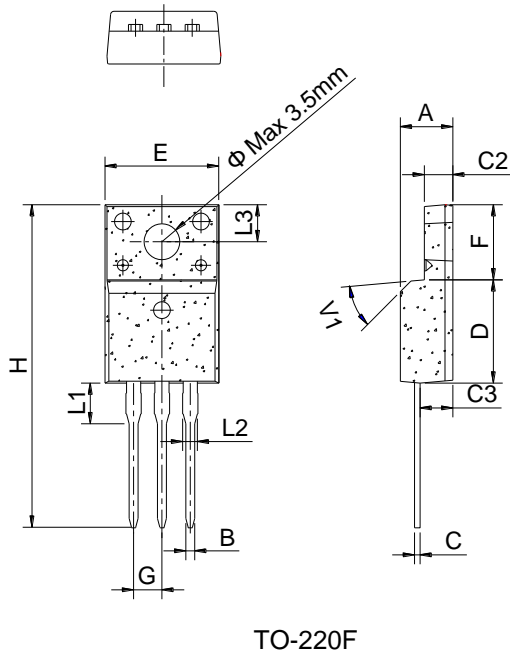
| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 2.20 | | 2.40 | 0.086 | | 0.095 |
| A2 | 0.03 | | 0.23 | 0.001 | | 0.009 |
| B | 0.55 | | 0.65 | 0.022 | | 0.026 |
| B2 | 5.10 | | 5.40 | 0.200 | | 0.213 |
| C | 0.45 | | 0.62 | 0.018 | | 0.024 |
| C2 | 0.48 | | 0.62 | 0.019 | | 0.024 |
| D | 6.00 | | 6.20 | 0.236 | | 0.244 |
| E | 6.40 | | 6.70 | 0.252 | | 0.264 |
| G | 4.40 | | 4.70 | 0.173 | | 0.185 |
| H | 9.35 | | 10.6 | 0.368 | | 0.417 |
| L1 | 1.30 | | 1.70 | 0.051 | | 0.067 |
| L2 | 1.37 | | 1.50 | 0.054 | | 0.059 |
| V1 | | 4° | | | 4° | |
| V2 | 0° | | 8° | 0° | | 8° |



| Ref. | Dimensions | | | | | |
|------|-------------|------|-------|----------|------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 2.10 | | 2.50 | 0.083 | | 0.098 |
| A2 | 0 | | 0.10 | 0 | | 0.004 |
| B | 0.66 | | 0.86 | 0.026 | | 0.034 |
| B2 | 5.18 | | 5.48 | 0.202 | | 0.216 |
| C | 0.40 | | 0.60 | 0.016 | | 0.024 |
| C2 | 0.44 | | 0.58 | 0.017 | | 0.023 |
| D | 5.90 | | 6.30 | 0.232 | | 0.248 |
| D1 | 5.30REF | | | 0.209REF | | |
| E | 6.40 | | 6.80 | 0.252 | | 0.268 |
| E1 | 4.63 | | | 0.182 | | |
| G | 4.47 | | 4.67 | 0.176 | | 0.184 |
| H | 9.50 | | 10.70 | 0.374 | | 0.421 |
| L | 1.09 | | 1.21 | 0.043 | | 0.048 |
| L2 | 1.35 | | 1.65 | 0.053 | | 0.065 |
| V1 | | 7° | | | 7° | |
| V2 | 0° | | 6° | 0° | | 6° |



| Ref. | Dimensions | | | | | |
|------|-------------|-------|-------|-----------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 2.10 | 2.30 | 2.50 | 0.083 | 0.091 | 0.098 |
| B | 0.66 | 0.76 | 0.86 | 0.026 | 0.030 | 0.034 |
| B2 | 5.15 | 5.33 | 5.48 | 0.203 | 0.210 | 0.216 |
| C | 0.44 | 0.51 | 0.58 | 0.017 | 0.020 | 0.023 |
| C2 | 0.44 | 0.51 | 0.58 | 0.017 | 0.020 | 0.023 |
| D | 5.90 | 6.10 | 6.30 | 0.232 | 0.240 | 0.248 |
| D2 | 5.30 REF | | | 0.209 REF | | |
| E | 6.40 | 6.60 | 6.80 | 0.252 | 0.260 | 0.268 |
| E2 | 4.83 REF | | | 0.190 REF | | |
| G | 2.19 | 2.29 | 2.39 | 0.086 | 0.090 | 0.094 |
| H | 10.60 | 11.20 | 11.80 | 0.417 | 0.441 | 0.465 |



| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.40 | | 4.80 | 0.173 | | 0.189 |
| B | 0.74 | 0.80 | 0.83 | 0.029 | 0.031 | 0.033 |
| C | 0.48 | | 0.75 | 0.019 | | 0.030 |
| C2 | 2.40 | | 2.70 | 0.094 | | 0.106 |
| C3 | 2.60 | | 3.00 | 0.102 | | 0.118 |
| D | 8.80 | | 9.30 | 0.346 | | 0.366 |
| E | 9.70 | | 10.3 | 0.382 | | 0.406 |
| F | 6.40 | | 7.00 | 0.252 | | 0.276 |
| G | | 2.54 | | | 0.1 | |
| H | 28.0 | | 29.8 | 1.102 | | 1.173 |
| L1 | | 3.63 | | | 0.143 | |
| L2 | 1.14 | | 1.70 | 0.045 | | 0.067 |
| L3 | | 3.30 | | | 0.130 | |
| V1 | | 45° | | | 45° | |