

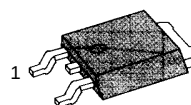
### HIGH VOLTAGE POWER TRANSISTOR D-PACK FOR SURFACE MOUNT APPLICATIONS

- High speed Switching
- Suitable for Switching Regulator Motor Control
- Straight Lead(I.PACK, I Suffix)
- Lead Formed for Surface Mount Applications(No Suffix)

### ABSOLUTE MAXIMUM RATINGS

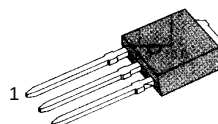
| Characteristic                                   | Symbol    | Rating    | Unit             |
|--------------------------------------------------|-----------|-----------|------------------|
| Collector-Base Voltage                           | $V_{CBO}$ | 700       | V                |
| Collector-Emitter Voltage                        | $V_{CEO}$ | 400       | V                |
| Emitter-Base Voltage                             | $V_{EBO}$ | 9         | V                |
| Collector Current (DC)                           | $I_C$     | 1.5       | A                |
| Collector Current (Pulse)                        | $I_C$     | 3         | A                |
| Base Current                                     | $I_B$     | 0.75      | A                |
| Collector Dissipation ( $T_C=25^\circ\text{C}$ ) | $P_C$     | 40        | W                |
| Junction Temperature                             | $T_J$     | 150       | $^\circ\text{C}$ |
| Storage Temperature                              | $T_{STG}$ | -65 ~ 150 | $^\circ\text{C}$ |

D-PAK



1. Base 2. Collector 3. Emitter

I-PAK



1. Base 2. Collector 3. Emitter

### ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ )

| Characteristic                         | Symbol                  | Test Conditions                               | Min | Typ | Max | Unit          |
|----------------------------------------|-------------------------|-----------------------------------------------|-----|-----|-----|---------------|
| * Collector Emitter Breakdown Voltage  | $V_{CEO} \text{ (sus)}$ | $I_C = 5\text{mA}, I_B = 0$                   | 400 |     |     | V             |
| Emitter Cutoff Current                 | $I_{EBO}$               | $V_{EB} = 9\text{V}, I_C = 0$                 |     |     | 10  | $\mu\text{A}$ |
| * DC Current Gain                      | $h_{FE}$                | $V_{CE} = 5\text{V}, I_C = 0.5\text{A}$       | 8   |     | 40  |               |
|                                        |                         | $V_{CE} = 1\text{V}, I_C = 2\text{A}$         | 5   |     |     |               |
| * Collector Emitter Saturation Voltage | $V_{CE(sat)}$           | $I_C = 0.5\text{A}, I_B = 0.1\text{A}$        |     |     | 0.5 | V             |
|                                        |                         | $I_C = 1\text{A}, I_B = 0.25\text{A}$         |     |     | 1   | V             |
|                                        |                         | $I_C = 1.5\text{A}, I_B = 0.5\text{A}$        |     |     | 3   | V             |
| * Base Emitter Saturation Voltage      | $V_{BE(sat)}$           | $I_C = 0.5\text{A}, I_B = 0.1\text{A}$        |     |     | 1   | V             |
|                                        |                         | $I_C = 1\text{A}, I_B = 0.25\text{A}$         |     |     | 1.2 | V             |
| Output Capacitance                     | $C_{OB}$                | $V_{CB} = 10\text{V}, f = 0.1\text{MHz}$      |     | 21  |     | pF            |
| Current - Gain Bandwidth Product       | $f_T$                   | $V_{CE} = 10\text{V}, I_C = 0.1\text{A}$      | 4   |     |     | MHz           |
| Turn on time                           | $t_{ON}$                | $V_{CC} = 125\text{V}$                        |     |     | 1.1 | $\mu\text{s}$ |
| Storage time                           | $t_{STG}$               | $I_C = 1\text{A}$                             |     |     | 4.0 | $\mu\text{s}$ |
| Fall Time                              | $t_F$                   | $I_{B1} = 0.2\text{A}, I_{B2} = -0.2\text{A}$ |     |     | 0.7 | $\mu\text{s}$ |

\* Pulse Test : Pulse Width=5ms, Duty Cycle  $\leq 10\%$

KSH13003

NPN EPITAXIAL SILICON TRANSISTOR

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