



## MCP718

### Features

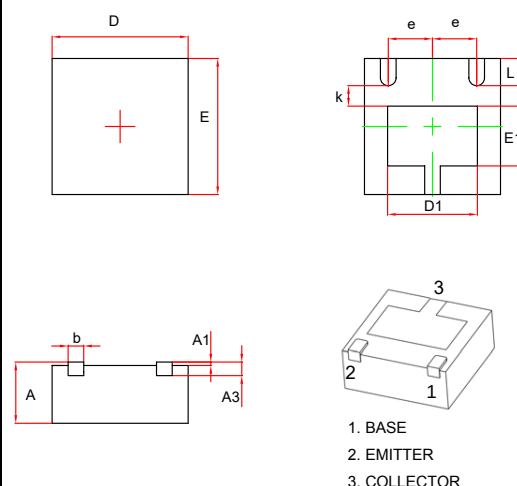
- Halogen free available upon request by adding suffix "-HF"
- Low Equivalent On Resistance
- Low Saturation Voltage
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: 718

### Maximum Ratings @ 25°C Unless Otherwise Specified

| Symbol          | Rating                                 | Rating      | Unit |
|-----------------|----------------------------------------|-------------|------|
| $V_{CEO}$       | Collector-Emitter Voltage              | -20         | V    |
| $V_{CBO}$       | Collector-Base Voltage                 | -25         | V    |
| $V_{EBO}$       | Emitter-Base Voltage                   | -7.5        | V    |
| $I_C$           | Collector Current                      | -6          | A    |
| $P_D$           | Power Dissipation                      | 1           | W    |
| $R_{\theta JA}$ | Thermal Resistance Junction to Ambient | 125         | °C/W |
| $T_J$           | Operating Junction Temperature         | -55 to +150 | °C   |
| $T_{STG}$       | Storage Temperature                    | -55 to +150 | °C   |

## PNP Plastic-Encapsulate Transistors

### DFN2020-3



| DIM | INCHES    |       | MM        |       | NOTE |
|-----|-----------|-------|-----------|-------|------|
|     | MIN       | MAX   | MIN       | MAX   |      |
| A   | 0.028     | 0.035 | 0.700     | 0.900 |      |
| A1  | 0.000     | 0.002 | 0.000     | 0.050 |      |
| A3  | 0.008REF. |       | 0.203REF. |       |      |
| D   | 0.076     | 0.082 | 1.924     | 2.076 |      |
| E   | 0.076     | 0.082 | 1.924     | 2.076 |      |
| D1  | 0.048     | 0.056 | 1.220     | 1.420 |      |
| E1  | 0.031     | 0.039 | 0.780     | 0.980 |      |
| k   | 0.008MIN. |       | 0.200MIN. |       |      |
| b   | 0.007     | 0.011 | 0.180     | 0.280 |      |
| e   | 0.026TYP. |       | 0.650TYP. |       |      |
| L   | 0.013     | 0.019 | 0.324     | 0.476 |      |

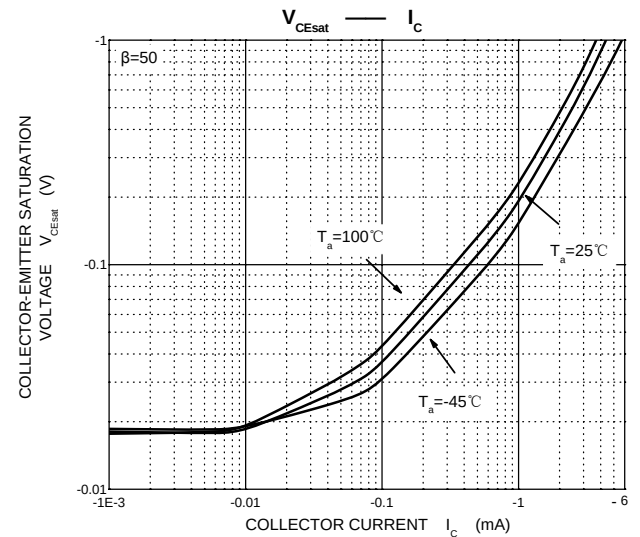
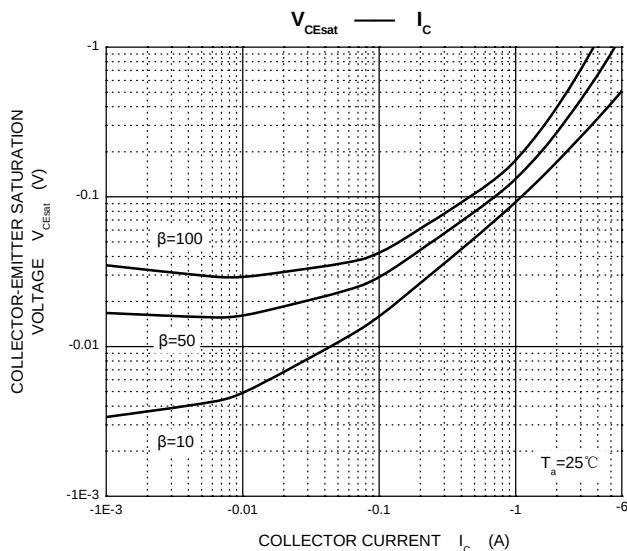
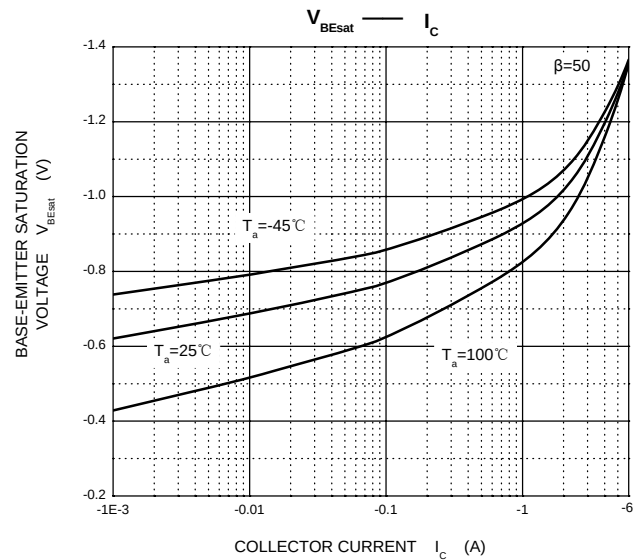
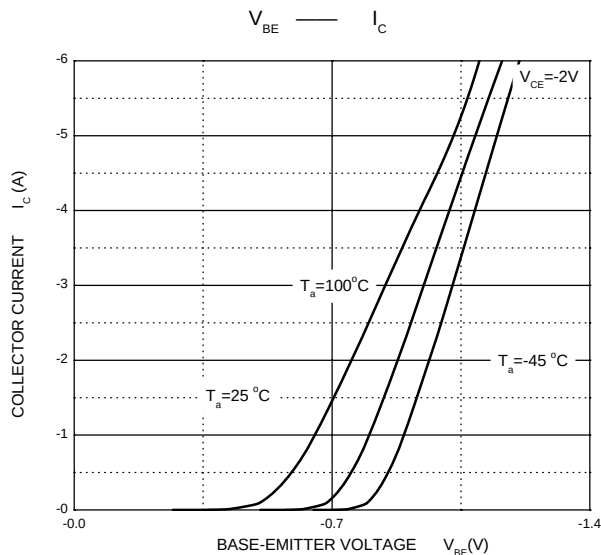
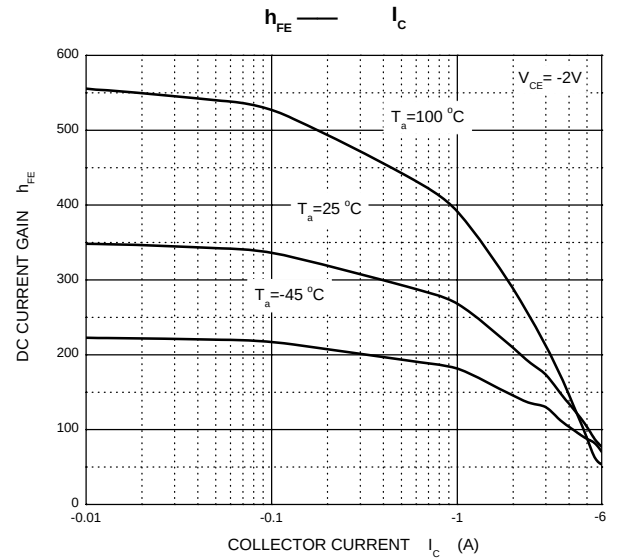
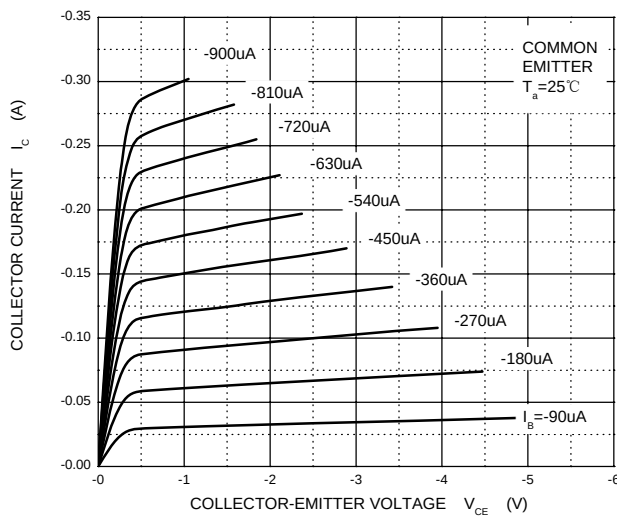
## ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted )

| Parameter                             | Symbol        | Test conditions                                                  | Min  | Typ | Max    | Unit |
|---------------------------------------|---------------|------------------------------------------------------------------|------|-----|--------|------|
| Collector-base breakdown voltage      | $V_{(BR)CBO}$ | $I_C=-100\mu\text{A}, I_E=0$                                     | -25  |     |        | V    |
| Collector-emitter breakdown voltage*  | $V_{(BR)CEO}$ | $I_C=-10\text{mA}, I_B=0$                                        | -20  |     |        | V    |
| Emitter-base breakdown voltage        | $V_{(BR)EBO}$ | $I_E=-100\mu\text{A}, I_C=0$                                     | -7.5 |     |        | V    |
| Collector cut-off current             | $I_{CBO}$     | $V_{CB}=-20\text{V}, I_E=0$                                      |      |     | -25    | nA   |
| Emitter cut-off current               | $I_{EBO}$     | $V_{EB}=-6\text{V}, I_C=0$                                       |      |     | -25    |      |
| DC current gain*                      | $h_{FE}$      | $V_{CE}=-2\text{V}, I_C=-10\text{mA}$                            | 300  |     |        |      |
|                                       |               | $V_{CE}=-2\text{V}, I_C=-100\text{mA}$                           | 300  |     |        |      |
|                                       |               | $V_{CE}=-2\text{V}, I_C=-2\text{A}$                              | 150  |     |        |      |
|                                       |               | $V_{CE}=-2\text{V}, I_C=-6\text{A}$                              | 15   |     |        |      |
| Collector-emitter saturation voltage* | $V_{CE(sat)}$ | $I_C=-0.1\text{A}, I_B=-10\text{mA}$                             |      |     | -30    | mV   |
|                                       |               | $I_C=-1\text{A}, I_B=-20\text{mA}$                               |      |     | -220   |      |
|                                       |               | $I_C=-1.5\text{A}, I_B=-50\text{mA}$                             |      |     | -250   |      |
|                                       |               | $I_C=-2.5\text{A}, I_B=-150\text{mA}$                            |      |     | -350   |      |
|                                       |               | $I_C=-3.5\text{A}, I_B=-350\text{mA}$                            |      |     | -300   |      |
| Base-emitter turn-on voltage*         | $V_{BE(on)}$  | $V_{CE}=-2\text{V}, I_C=-3.5\text{A}$                            |      |     | -0.95  | V    |
| Base-emitter saturation voltage*      | $V_{BE(sat)}$ | $I_B=-350\text{mA}, I_C=-3.5\text{A}$                            |      |     | -1.075 | V    |
| Transition frequency                  | $f_T$         | $V_{CE}=-10\text{V}, I_C=-50\text{mA}, f=100\text{MHz}$          | 150  |     |        | MHz  |
| Turn-on time                          | $t_{on}$      | $V_{CB}=-10\text{V}, I_C=-1\text{A}, I_{B1}=I_{B2}=-10\text{mA}$ |      | 40  |        | ns   |
| Turn-off time                         | $t_{off}$     |                                                                  |      | 670 |        |      |

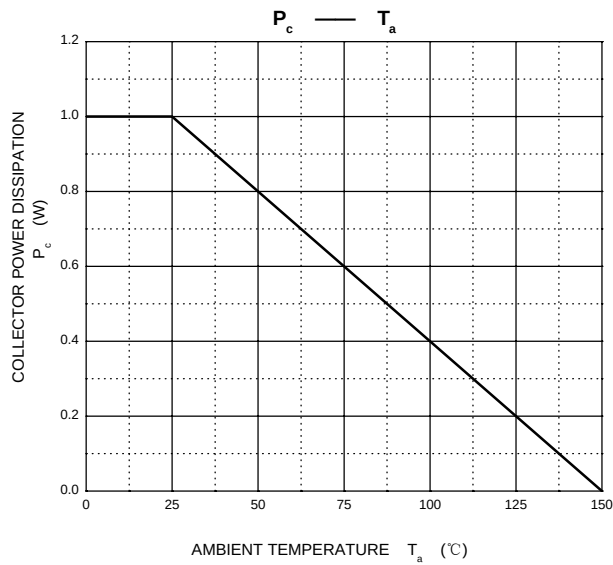
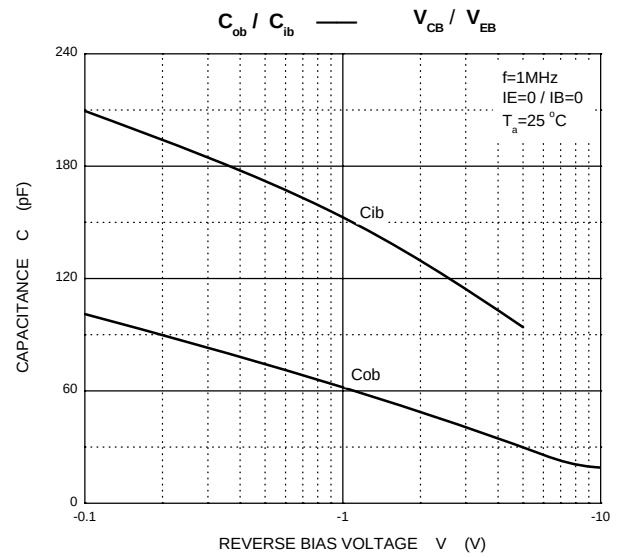
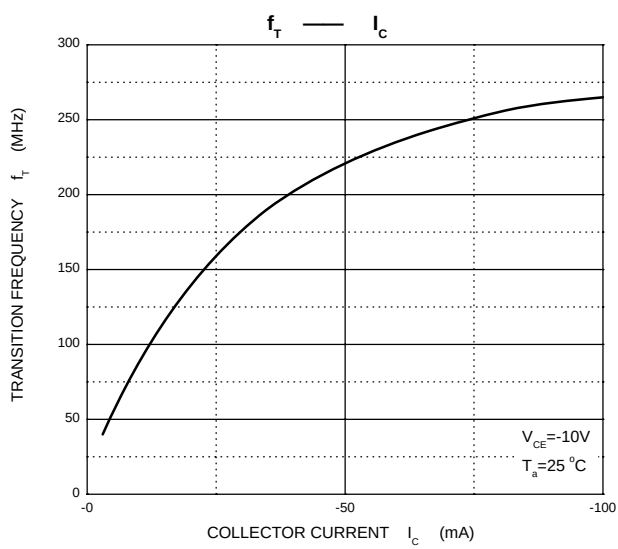
\* Pulse Test : Pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$ .

## Typical Characteristics

Static Characteristic



## Typical Characteristics



## Ordering Information :

| Device         | Packing              |
|----------------|----------------------|
| Part Number-TP | Tape&Reel;3Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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