## Medium power transistor（50V，1A） <br> 2SC5053

－Features
1）Low saturation voltage，typically $\mathrm{V}_{\text {CE（sat）}}=0.12 \mathrm{~V}$ at $\mathrm{II}_{\mathrm{c}} /$ $\mathrm{I}_{\mathrm{B}}=500 \mathrm{~mA} / 50 \mathrm{~mA}$
2） $\mathrm{P}_{\mathrm{C}}=2 \mathrm{~W}$（on $40 \times 40 \times 0.7 \mathrm{~mm}$ ceramic board）
3）Complements the 2SA1900
－External dimensions（Unit ：mm）

－Absolute maximum ratings $\left(\mathrm{Ta}=25^{\circ} \mathrm{C}\right)$

| Parameter | Symbol | Limits | Unit |  |
| :---: | :---: | :---: | :---: | :---: |
| Collector－base voltage | Vсво | －60 | V |  |
| Collector－emitter voltage | Vceo | －50 | V |  |
| Emitter－base voltage | Vebo | －5 | V |  |
| Collector current | Ic | －1 | A |  |
|  |  | －2 | A（Pulse） | ＊1 |
| Collector power dissipation | Pc | 0.5 | W |  |
|  |  | 2 | W | ＊2 |
| Collector power dissipation | Tj | 150 | ${ }^{\circ} \mathrm{C}$ |  |
| Storage temperature | $\mathrm{T}_{\text {stg }}$ | -55 to +150 | ${ }^{\circ} \mathrm{C}$ |  |

＊1 Single pulse $\mathrm{Pw}=100 \mathrm{~ms}$ ，Duty＝1／2
$* 2$ When mounted on a $40 \times 40 \times 0.7 \mathrm{~mm}$ seramic board．
－External dimensions $\left(\mathrm{Ta}=25^{\circ} \mathrm{C}\right)$

| Parameter | Symbol | Min． | Typ． | Max． | Unit | Conditions |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Collector－base breakdown voltage | BV cbo | －60 | － | － | V | $\mathrm{Ic}=-50 \mu \mathrm{~A}$ |
| Collector－emitter breakdown voltage | BV ${ }_{\text {ceo }}$ | －50 | － | － | V | $\mathrm{Ic}=-1 \mathrm{~mA}$ |
| Emitter－base breakdown voltage | BV ${ }_{\text {ebo }}$ | －5 | － | － | V | $\mathrm{IE}=-50 \mu \mathrm{~A}$ |
| Collector cutoff current | Icbo | － | － | －0．1 | $\mu \mathrm{A}$ | V cb $=-40 \mathrm{~V}$ |
| Emitter cutoff current | Iebo | － | － | －0．5 | $\mu \mathrm{A}$ | V EB $=-4 \mathrm{~V}$ |
| Collector－emitter saturation voltage | $\mathrm{V}_{\text {ce（sat）}}$ | － | － | －0．4 | V | $\mathrm{Ic} / \mathrm{l}_{\mathrm{B}}=-500 \mathrm{~mA} /-50 \mathrm{~mA}$ |
| DC current transfer ratio | $h_{\text {fe }}$ | 120 | － | 270 | － | Vce／lc $=-3 \mathrm{~V} /-0.5 \mathrm{~A}$ |
| Transition frequency | $\mathrm{f}_{\mathrm{T}}$ | － | 150 | － | MHz | $\mathrm{V} C \mathrm{E}=-5 \mathrm{~V}, \mathrm{IE}=50 \mathrm{~mA}, \mathrm{f}=100 \mathrm{MHz}$ |
| Output capacitance | Cob | － | 20 | － | pF | $\mathrm{V}_{C B}=-10 \mathrm{~V}, \mathrm{le}=0 \mathrm{~A}, \mathrm{f}=1 \mathrm{MHz}$ |

$\bullet$ Packaging specifications and hFE

| Type | 2SC5053 |
| :---: | :---: |
| Package | MPT3 |
| $\mathrm{h}_{\mathrm{FE}}$ | QR |
| Marking | $\mathrm{CG} *$ |
| Code | T 100 |
| Basic ordering unit（pleces） | 1000 |

＊Denotes hfe

- Electric characteristics curves


Fig. 1 Grounded emitter output characteristics


Fig. 2 DC current gain
vs. collector current


Fig. 5 Collector output capacitance vs. collector-base voltage


Fig. 3 Collector-emitter saturation voltage vs.collector current


Fig. 6 Safe operating area

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