

**SWITCHING TRANSISTORS N-P-N**  
**SCHALTTRANSISTOREN N-P-N**

| Type        | Maximum ratings ● Grenzdaten |           |           |       |                                         |               | $I_{CBO}$<br>max<br>$\mu A$ | at<br>bei | $U_{CB}$<br><br>V | $h_{21E}$<br><br>at<br>bei | $U_{CE}$<br><br>V | $I_C$<br><br>mA | $f_T$<br><br>MHz | $t_{on}$<br>max<br>ns | $t_{off}$<br>max<br>ns | Case<br>Gehäuse |
|-------------|------------------------------|-----------|-----------|-------|-----------------------------------------|---------------|-----------------------------|-----------|-------------------|----------------------------|-------------------|-----------------|------------------|-----------------------|------------------------|-----------------|
| Typ         | $U_{CBO}$                    | $U_{EBO}$ | $U_{CEO}$ | $I_C$ | $P_C$                                   | $\vartheta_j$ |                             |           |                   |                            |                   |                 |                  |                       |                        |                 |
|             | V                            | V         | V         | mA    | W                                       | °C            |                             |           |                   |                            |                   |                 |                  |                       |                        |                 |
| KSY21       | 40                           | 5         | 15        | 500   | 0,36 <sup>2)</sup><br>1,0 <sup>1)</sup> | 200           | 0,025                       |           | 20                | 30—120<br>> 10             | 1<br>5<br>10      | 10<br>500<br>20 | > 300            | 40                    | 40                     | T11             |
| KSY34D      | 60                           | 5         | 40        | 600   | 2,6 <sup>1)</sup>                       | 200           | 0,07                        |           | 50                | > 10                       | 1<br>10           | 500<br>30       | > 200            | 50                    | 95                     | T24             |
| KSY62A<br>B | 25                           | 5         | 15        | 200   | 1 <sup>1)</sup><br>0,35 <sup>2)</sup>   | 200           | 0,5                         |           | 15                | 20—60<br>30—300            | 1<br>1<br>10      | 10<br>10<br>10  | > 200            | 40                    | 75                     | T11             |
| KSY63       | 40                           | 5         | 15        | 200   | 1 <sup>1)</sup><br>0,35 <sup>2)</sup>   | 200           | 0,025                       |           | 20                | 30—120                     | 1<br>10           | 10<br>10        | > 300            | 40                    | 75                     | T11             |
| KSY71       | 40                           | 4,5       | 15        | 200   | 1,0 <sup>1)</sup><br>0,36 <sup>2)</sup> | 200           | 0,4                         |           | 20                | 40—120<br>> 20             | 1<br>2<br>10      | 10<br>100<br>10 | > 500            | 12                    | 18                     | T11             |
| KSY72       | 40                           | 4,5       | 15        | 200   | 0,2 <sup>2)</sup><br>0,7 <sup>1)</sup>  | 155           | 0,4                         |           | 20                | 40—250                     | 1<br>10           | 10<br>10        | > 450            | 15                    | 25                     | T11             |
| TR12        | 12                           | 5         | 10        | 100   | 0,2 <sup>2)</sup>                       | 200           | 0,4                         |           | 10                | > 25                       | 0,3               | 30<br>10        | —                | 12                    | 18                     | T11             |
| TR13        | 12                           | 5         | 12        | 200   | 0,2                                     |               |                             |           |                   | > 20                       | 0,4               | 80              |                  | 40                    | 40                     | T11             |
| TR18        | 40                           | 4,5       | 20        | 200   | 0,3                                     |               |                             |           |                   | > 40                       | 1                 | 80              |                  | 40                    | 40                     | T11             |
| 8342—1      |                              | 5         | 12        | 500   | 0,36 <sup>2)</sup>                      |               |                             |           |                   | 30—120                     | 0,5               | 30              | > 200            |                       |                        | T11             |
| 8342—2      |                              | 5         | 12        | 500   | 0,36 <sup>2)</sup>                      |               |                             |           |                   | 25—125                     | 1                 | 170             | > 800            | $t_s = 3 \dots 12$    |                        | T11             |

1)  $\vartheta_a \leq 45^\circ\text{C}$ , with ideal cooling ● mit idealer Kühlung2)  $\vartheta_a \leq 25^\circ\text{C}$ , without cooling ● ohne Kühlung
**SWITCHING TRANSISTORS P-N-P**  
**SCHALTTRANSISTOREN P-N-P**

| Type  | Maximum ratings ● Grenzdaten |            |            |        |                   |               | $-I_{CBO}$<br>max<br>$\mu A$ | at<br>bei | $-U_{CB}$<br><br>V | $h_{21E}$<br><br>at<br>bei | $-U_{CE}$<br><br>V | $-I_C$<br><br>mA | $f_T$<br><br>MHz | $t_{on}$<br>max<br>ns | $t_{off}$<br>max<br>ns | Case<br>Gehäuse |
|-------|------------------------------|------------|------------|--------|-------------------|---------------|------------------------------|-----------|--------------------|----------------------------|--------------------|------------------|------------------|-----------------------|------------------------|-----------------|
| Typ   | $-U_{CBO}$                   | $-U_{EBO}$ | $-U_{CEO}$ | $-I_C$ | $P_C$             | $\vartheta_j$ |                              |           |                    |                            |                    |                  |                  |                       |                        |                 |
|       | V                            | V          | V          | mA     | W                 | °C            |                              |           |                    |                            |                    |                  |                  |                       |                        |                 |
| TR15  | 10                           | 4          | 10         | 200    | 0,2 <sup>1)</sup> | 200           | 5 <sup>2)</sup>              |           | 6                  | > 35<br>> 20               | 0,5<br>0,6<br>2    | 30<br>4<br>4     | > 200            | 60                    | 90                     | T11             |
| TR23  | 10                           | 2          | 10         |        | 0,1 <sup>1)</sup> |               |                              |           |                    | > 40                       | 1                  | 5                | > 300            | 60                    | 90                     | T11             |
| KSY81 | 12                           | 4          | 12         | 200    | 1,0 <sup>2)</sup> | 200           | 0,08                         |           | 6                  | 40—150<br>> 30             | 0,5<br>0,3         | 30<br>10         | > 400            | 60                    | 90                     | T11             |
| KSY82 | 12                           | 4          | 10         | 100    | 0,2 <sup>1)</sup> | 155           | 0,08                         |           | 6                  | 35—135<br>> 30             | 0,5<br>0,3         | 30<br>10         | > 250            | 60                    | 90                     | T11             |

1)  $\vartheta_a \leq 25^\circ\text{C}$ , without cooling ● ohne Kühlung2)  $\vartheta_a \leq 45^\circ\text{C}$ ; with ideal cooling ● mit idealer Kühlung