# 2SK1177

External dimensions 1.....FM20

## Absolute Maximum Ratings (Ta = 25°C)

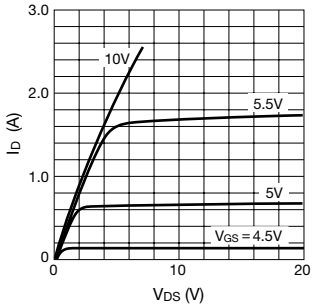
| Symbol | Ratings | Unit |
|---|---|---|
| $V_{DSS}$ | 500 | V |
| $V_{GSS}$ | ±20 | V |
| $I_D$ | ±2.5 | A |
| $I_{D\ (pulse)}$ | ±10 (Tch ≦150°C) | A |
| $P_D$ | 30 (Tc = 25°C) | W |
| $E_{AS}$ * | 200 | mJ |
| Tch | 150 | °C |
| Tstg | –55 to +150 | °C |

*: $V_{DD}$ = 50V, L = 60mH, $I_L$ = 2.5A, unclamped, See Figure 1 on Page 5.

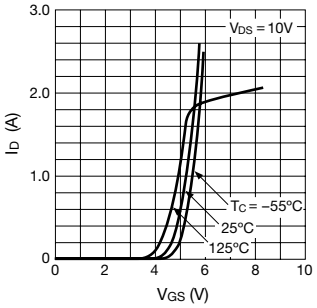
## Electrical Characteristics (Ta = 25°C)

| Symbol | Ratings min | Ratings typ | Ratings max | Unit | Conditions |
|---|---|---|---|---|---|
| $V_{(BR)\ DSS}$ | 500 | | | V | $I_D$ = 250μA, $V_{GS}$ = 0V |
| $I_{GSS}$ | | | ±500 | nA | $V_{GS}$ = ±20V |
| $I_{DSS}$ | | | 250 | μA | $V_{DS}$ = 500V, $V_{GS}$ = 0V |
| $V_{TH}$ | 2.0 | | 4.0 | V | $V_{DS}$ = 10V, $I_D$ = 250μA |
| $Re_{(yfs)}$ | 1.5 | 2.3 | | S | $V_{DS}$ = 10V, $I_D$ = 1.4A |
| $R_{DS\ (on)}$ | | 2.6 | 3.0 | Ω | $V_{GS}$ = 10V, $I_D$ = 1.4A |
| Ciss | | 350 | | pF | $V_{DS}$ = 25V, f = 1.0MHz, $V_{GS}$ = 0V |
| Coss | | 54 | | pF | |
| $t_{on}$ | | 50 | | ns | $I_D$ = 1.4A, $V_{DD}$ = 250V, $V_{GS}$ = 10V, See Figure 2 on Page 5. |
| $t_{off}$ | | 140 | | ns | |

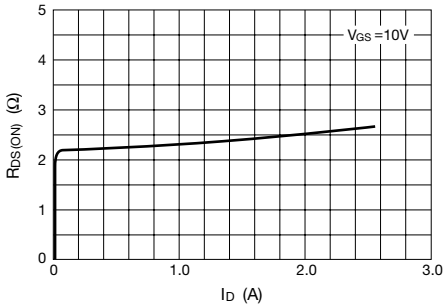
$V_{DS}$ — $I_D$ Characteristics



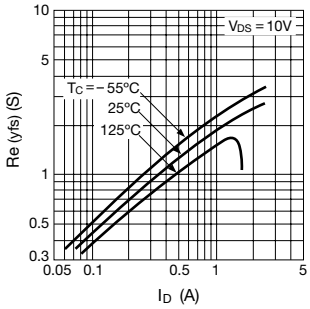

$V_{GS}$ — $I_D$ Characteristics



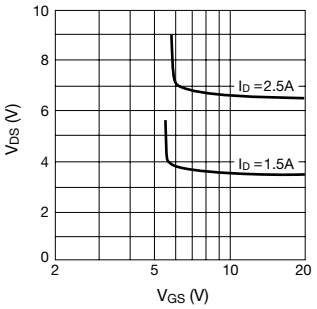

$I_D$ — $R_{DS\ (ON)}$ Characteristics



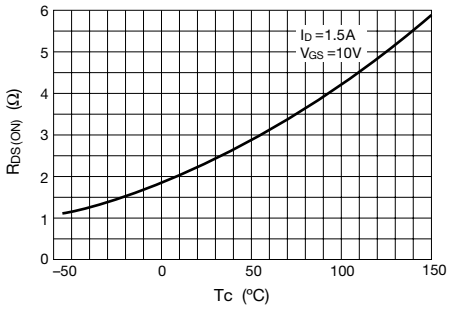

$I_D$ — $Re_{(yfs)}$ Characteristics



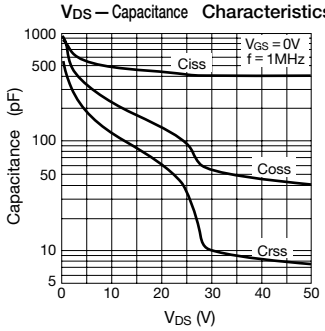

$V_{GS}$ — $V_{DS}$ Characteristics



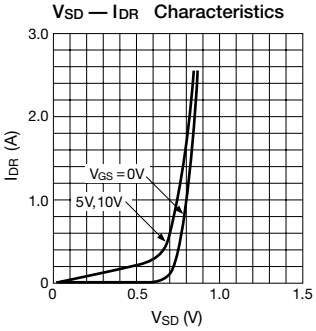

$T_C$ — $R_{DS\ (ON)}$ Characteristics



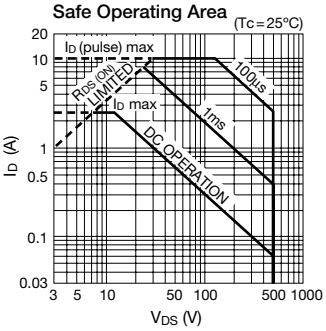

$V_{DS}$ — Capacitance Characteristics




$V_{SD}$ — $I_{DR}$ Characteristics




Safe Operating Area (Tc = 25°C)




Ta — $P_D$ Characteristics

