MOS FET 2SK3851

Absolute Maximum Ratings (Ta=25°C)

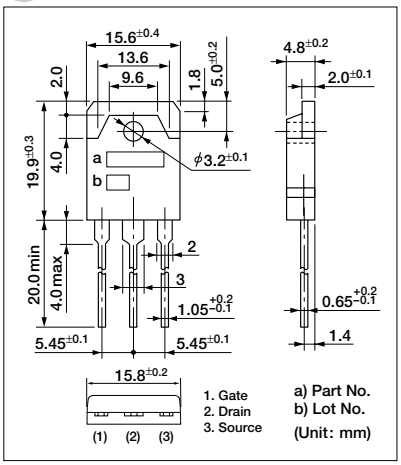
Symbol	Ratings	Unit
V_{DSS}	60	V
V_{GSS}	±20	V
I_D	±85	A
$I_{D\ (pulse)}$*1	±280	A
P_D	150	W
EAS*2	280	mJ
T_{ch}	150	°C
Tstg	−55 to +150	°C

* 1: $P_W \leqq 100\mu s$, duty cycle $\leqq 1\%$
* 2: V_{DD} = 20V, L = 1mH, I_L = 20A, unclamped

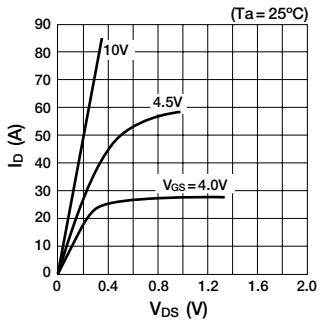
Electrical Characteristics (Ta=25°C)

Symbol	Test Conditions	Ratings min	Ratings typ	Ratings max	Unit
$V_{(BR)\ DSS}$	I_D = 100μA, V_{GS} = 0V	60			V
I_{GSS}	V_{GS} = ±20V			±10	μA
I_{DSS}	V_{DS} = 60V, V_{GS} = 0V			100	μA
V_{TH}	V_{DS} = 10V, I_D = 1mA	2.0	2.5	3.0	V
$R_{e\ (yfs)}$	V_{DS} = 10V, I_D = 42A	30			S
$R_{DS\ (ON)}$	V_{GS} = 10V, I_D = 42A		4.0	4.7	mΩ
Ciss	V_{DS} = 10V, f = 1.0MHz, V_{GS} = 0V		11500		pF
Coss			1500		pF
Crss			1100		pF
$t_{d\ (on)}$	I_D = 42A, $V_{DD} \fallingdotseq$ 16V, R_G = 22Ω, V_{GS} = 10V		60		ns
t_r			25		ns
$t_{d\ (off)}$			370		ns
t_f			65		ns
V_{SD}	I_{SD} = 50A, V_{GS} = 0V		0.87	1.5	V
t_{rr}	I_{SD} = 50A, di/dt = 100A/μS		70		ns

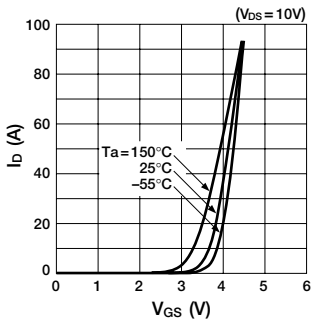
External Dimensions TO-3P



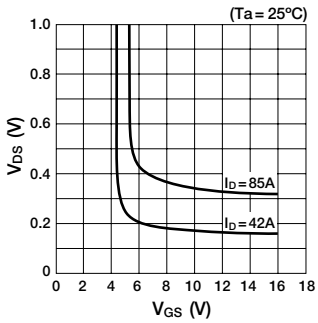
■ I_D — V_{DS} Characteristics



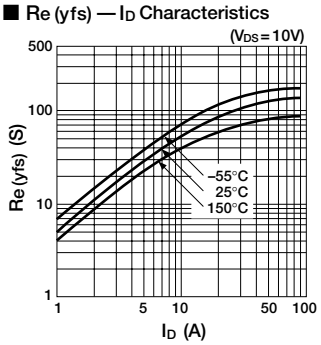
■ I_D — V_{GS} Characteristics



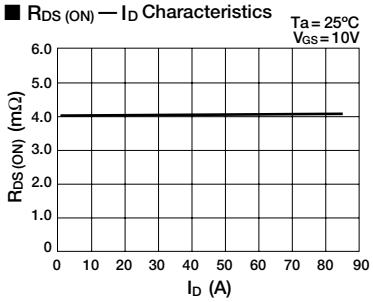
■ V_{DS} — V_{GS} Characteristics



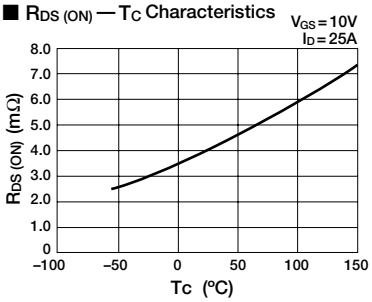
■ Re (yfs) — I_D Characteristics



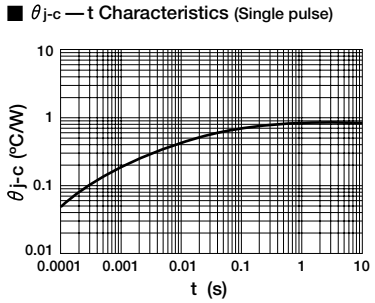
■ $R_{DS\ (ON)}$ — I_D Characteristics



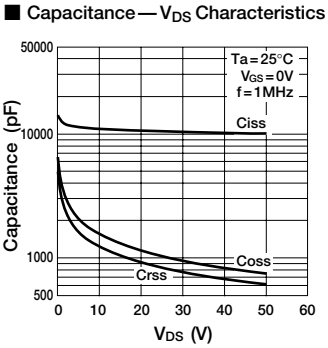
■ $R_{DS\ (ON)}$ — T_C Characteristics



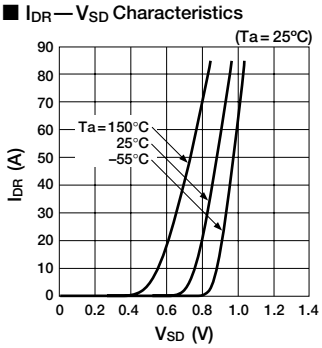
■ $\theta_{j\text{-}c}$ — t Characteristics (Single pulse)



■ Capacitance — V_{DS} Characteristics



■ I_{DR} — V_{SD} Characteristics



■ P_D — T_C Characteristics