2SK758

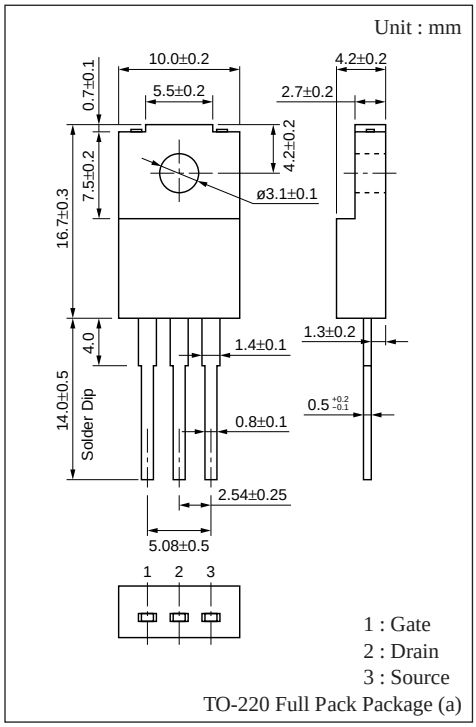
Silicon N-Channel Power F-MOS

■ Features

- Low ON-resistance $R_{DS(on)}$: $R_{DS(on)}$ = 0.45Ω(typ)
- High-speed switching : t_f = 45ns(typ)
- No secondary breakdown

■ Applications

- DC-DC converter
- Non-contact relay
- Solenoid drive
- Motor drive



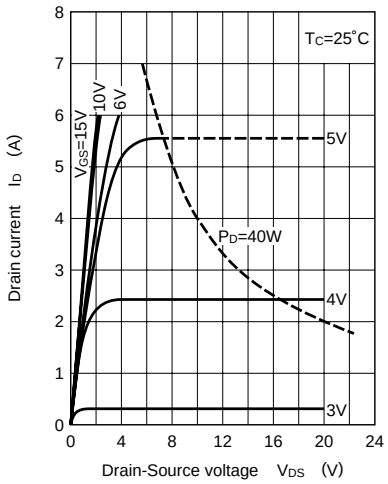
■ Absolute Maximum Ratings (Tc = 25˚C)

Parameter		Symbol	Rating	Unit
Drain-Source breakdown voltage		V_{DSS}	250	V
Gate-Source voltage		V_{GSS}	±20	V
Drain current	DC	I_D	±5	A
	Pulse	I_{DP}	±10	A
Allowable power dissipation	T_C =25˚C	P_D	40	W
	Ta =25˚C		2	
Channel temperature		T_{ch}	150	˚C
Storage temperature		T_{stg}	–55 to +150	˚C

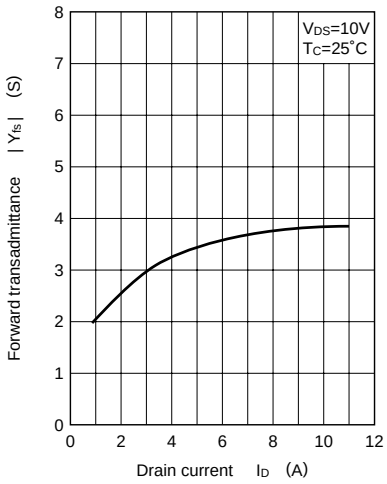
■ Electrical Characteristics (Tc = 25˚C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source cut-off current	I_{DSS}	V_{DS} =200V, V_{GS} = 0			0.1	mA
Gate-Source leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0			±1	µA
Drain-Source breakdown voltage	V_{DSS}	I_D=1mA, V_{GS} = 0	250			V
Gate threshold voltage	V_{th}	V_{DS} =10V, I_D=1mA	1		5	V
Drain-Source ON-resistance	$R_{DS\ (on)}$	V_{GS} =10V, I_D= 3A		0.45	0.7	Ω
Forward transadmittance	$\lvert Y_{fs} \rvert$	V_{DS}= 10V, I_D= 3A	1.8	3		S
Input capacitance	C_{iss}	V_{DS} =10V, V_{GS}= 0, f=1MHz		390		pF
Output capacitance	C_{oss}			160		pF
Feedback capacitance	C_{rss}			80		pF
Turn-on time	t_{on}	V_{GS} =10V, I_D= 3A V_{DD}=100V, R_L= 33Ω		30		ns
Fall time	t_f			45		ns
Turn-off time (delay time)	$t_{d\ (off)}$			90		ns

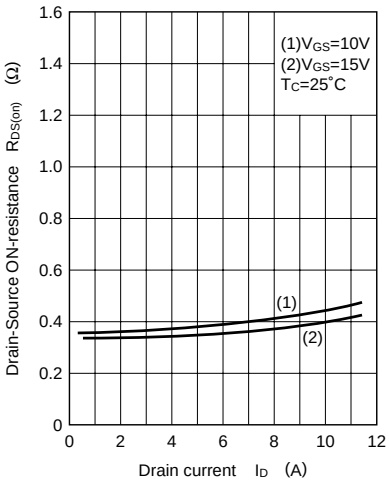
$I_D - V_{DS}$



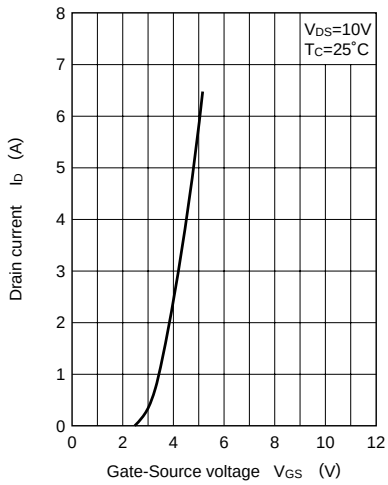
$|Y_{fs}| - I_D$



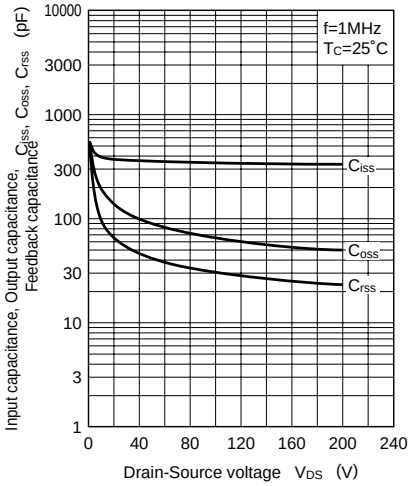
$R_{DS\,(on)} - I_D$



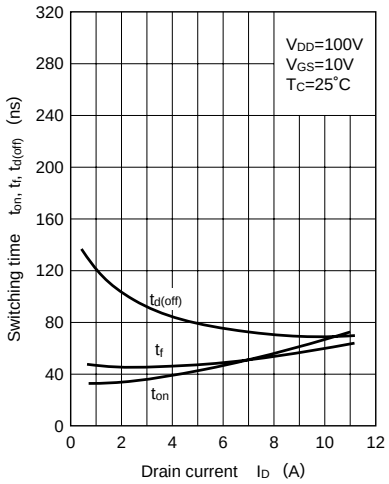
$I_D - V_{GS}$



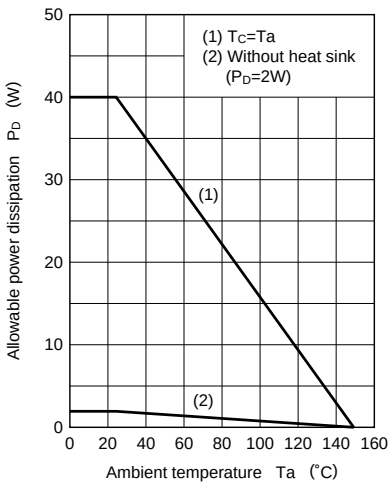
$C_{iss}, C_{oss}, C_{rss} - V_{DS}$



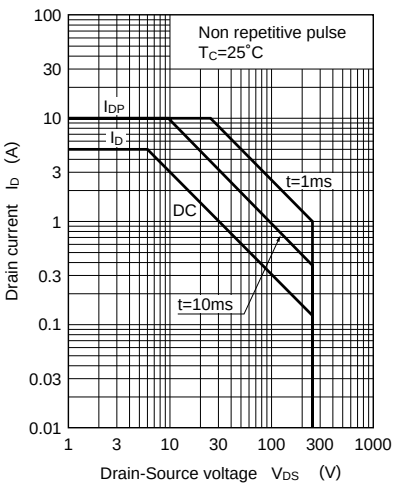
$t_{on}, t_f, t_{d\,(off)} - I_D$



$P_D - Ta$



Area of safe operation (ASO)



$R_{DS\,(on)} - I_D$