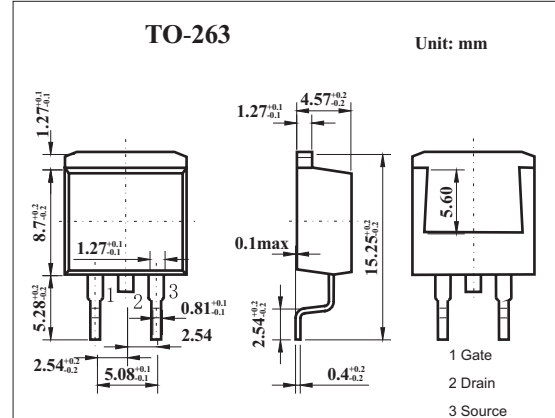


## MOS Field Effect Transistor 2SK3510

### ■ Features

- Super low on-state resistance:  
 $R_{DS(on)} = 8.5 \text{ m}\Omega \text{ MAX. (} V_{GS} = 10 \text{ V, } I_D = 42 \text{ A)}$
- Low  $C_{iss}$ :  $C_{iss} = 8500 \text{ pF TYP.}$
- Built-in gate protection diode



### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain to source voltage	$V_{DS}$	75	V
Gate to source voltage	$V_{GS}$	$\pm 20$	V
Drain current	$I_D$	$\pm 83$	A
	$I_{dp}^*$	$\pm 332$	A
Power dissipation	$P_D$	$T_c=25^\circ\text{C}$	125
		$T_A=25^\circ\text{C}$	1.5
Channel temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\*  $PW \leq 10 \mu\text{s}$ , Duty Cycle  $\leq 1\%$

### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Drain cut-off current	$I_{DSS}$	$V_{DS}=70\text{V}, V_{GS}=0$			10	$\mu\text{A}$	
Gate leakage current	$I_{GSS}$	$V_{GS}=\pm 20\text{V}, V_{DS}=0$			$\pm 1$	$\mu\text{A}$	
Gate cutoff voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	2.0	3.0	4.0	V	
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10\text{V}, I_D=42\text{A}$	30	60		S	
Drain to source on-state resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}, I_D=42\text{A}$		6.5	8.5	$\text{m}\Omega$	
Input capacitance	$C_{iss}$	$V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHZ}$		8500		pF	
Output capacitance	$C_{oss}$				1300		pF
Reverse transfer capacitance	$C_{rss}$				650		pF
Turn-on delay time	$t_{on}$	$I_D=42\text{A}, V_{GS(on)}=10\text{V}, R_L=10\Omega, V_{DD}=38\text{V}$		35		ns	
Rise time	$t_r$			28		ns	
Turn-off delay time	$t_{off}$			105		ns	
Fall time	$t_f$			16		ns	
Total Gate Charge	$Q_G$	$I_D=83\text{A}, V_{DD}=60\text{V}, V_{GS}=10\text{V}$		150		nC	
Gate to Source Charge	$Q_{GS}$			30		nC	
Gate to Drain Charge	$Q_{GD}$			52		nC	