

MOS Field Effect Transistor

2SK3899

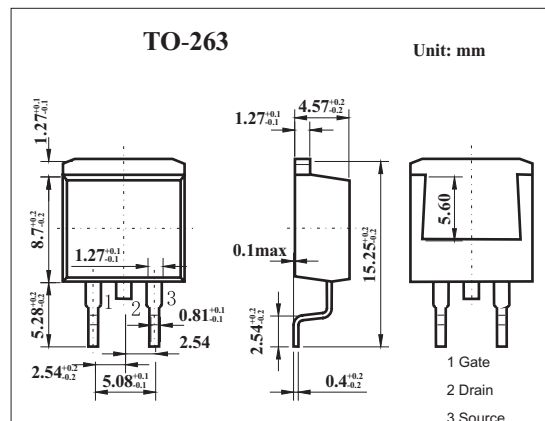
■ Features

- Low On-state resistance

$R_{DS(on)1} = 5.3\text{m}\Omega$ MAX. ($V_{GS} = 10\text{ V}$, $I_D = 42\text{ A}$)

$R_{DS(on)2} = 6.5\text{ m}\Omega$ MAX. ($V_{GS} = 4.5\text{ V}$, $I_D = 42\text{ A}$)

- Low C_{iss} : $C_{iss} = 5500\text{ pF}$ TYP.



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

Parameter	Symbol	Rating	Unit	
Drain to source voltage	V_{DS}	60	V	
Gate to source voltage	V_{GS}	± 20	V	
Drain current	I_D	± 84	A	
	I_{DP}^*	± 336	A	
Power dissipation	P_D	$T_A=25^\circ\text{C}$	1.5	W
		$T_C=25^\circ\text{C}$	146	
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}	$V_{DS}=60\text{V}, V_{GS}=0$			10	$\mu\text{ A}$
Gate leakage current	I_{GSS}	$V_{GS} = \pm 20\text{V}, V_{DS}=0$			± 10	$\mu\text{ A}$
Gate cut off voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	1.5	2.0	2.5	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10\text{V}, I_D=42\text{A}$	35	70		S
Drain to source on-state resistance	$R_{DS(on)1}$	$V_{GS}=10\text{V}, I_D=42\text{A}$		4.2	5.3	$\text{m}\Omega$
	$R_{DS(on)2}$	$V_{GS}=4.5\text{V}, I_D=42\text{A}$		4.9	6.5	$\text{m}\Omega$
Input capacitance	C_{iss}	$V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$		5500		pF
Output capacitance	C_{oss}			1050		pF
Reverse transfer capacitance	C_{rss}			350		pF
Turn-on delay time	t_{on}				19	ns
Rise time	t_r	$I_D=42\text{A}, V_{GS(on)}=10\text{V}, R_G=0\ \Omega, V_{DD}=30\text{V}$		13		ns
Turn-off delay time	t_{off}			91		ns
Fall time	t_f			10		ns
Total Gate Charge	Q_G		$V_{DD} = 48\text{V}$		96	
Gate to Source Charge	Q_{GS}	$V_{GS} = 10\text{ V}$		18		nC
Gate to Drain Charge	Q_{GD}	$I_D = 84\text{A}$		23.5		nC