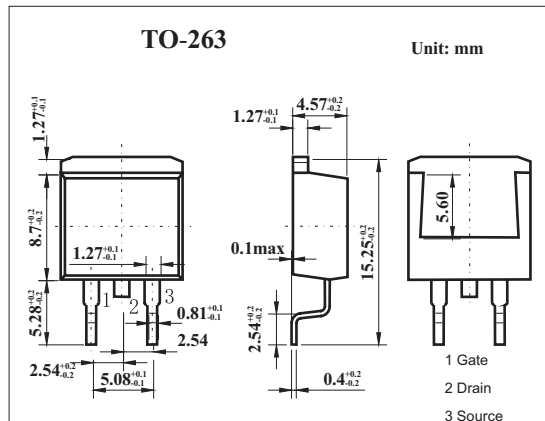**TY Semicondutor®** TY

2SK3424

■ Features

- 4.5-V drive available
- Low on-state resistance

  $R_{DS(on)1}$ = 1.5m Ω MAX. (V_{GS} = 10 V, I_D = 24 A)
- Low gate charge

  Q_G = 34 nC TYP. (I_D = 48 A, V_{DD} = 24V, V_{GS} = 10 V)
- Built-in gate protection diode
- Surface mount device available

TO-263   Unit: mm

1 Gate
2 Drain
3 Source

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain to source voltage	V_{DSS}	30	V
Gate to source voltage	V_{GSS}	$\pm$20	V
Drain current	I_D	$\pm$48	A
	I_{dp} *	$\pm$192	A
Power dissipation Tc=25℃	P_D	50	W
TA=25℃		1.5	
Channel temperature	T_{ch}	150	℃
Storage temperature	T_{stg}	-55 to +150	℃

   * PW≤10 μ s,Duty Cycle≤1%

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain cut-off current	I_{DSS}	V_{DS}=30V,V_{GS}=0			10	μA
Gate leakage current	I_{GSS}	V_{GS}=$\pm$20V,V_{DS}=0			$\pm$10	μA
Gat cutoff voltage	$V_{GS(off)}$	V_{DS}=10V,I_D=1mA	1.5		2.5	V
Forward transfer admittance	|Y_{fs}|	V_{DS}=10V,I_D=24A	13			S
Drain to source on-state resistance	$R_{DS(on)1}$	V_{GS}=10V,I_D=24A		7.7	11.5	mΩ
	$R_{DS(on)2}$	V_{GS}=4.5V,I_D=24A		10.5	17.0	mΩ
Input capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0,f=1MHZ		1900		pF
Output capacitance	C_{oss}			580		pF
Reverse transfer capacitance	C_{rss}			270		pF
Turn-on delay time	t_{on}	I_D=24A,$V_{GS(on)}$=10V,R_G=10 Ω ,V_{DD}=15V		14		ns
Rise time	t_r			13		ns
Turn-off delay time	t_{off}			61		ns
Fall time	t_f			22		ns
Total Gate Charge	Q_G	I_D =48A, V_{DD} =24V, V_{GS} = 10 V		34		nC
Gate to Source Charge	Q_{GS}			6.4		nC
Gate to Drain Charge	Q_{GD}			9.1		nC