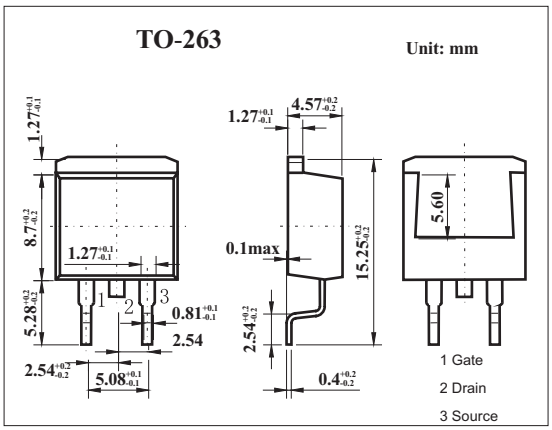
TY Semicondutor®

Product specification

2SK3431



■ Features

- Super low on-state resistance:
  $R_{DS(on)1}$ = 5.6mΩ MAX. (V_{GS} = 10 V, I_D = 42 A)
  $R_{DS(on)2}$ = 8.9 mΩ MAX. (V_{GS} = 4 V, I_D = 42 A)
- Low C_{iss}: C_{iss} = 6100 pF TYP.
- Built-in gate protection diode

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain to source voltage	V_{DSS}	40	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	±83	A
	I_{dp} *	±332	A
Power dissipation T_C=25℃ T_A=25℃	P_D	100 1.5	W
Channel temperature	T_{ch}	150	℃
Storage temperature	T_{stg}	-55 to +150	℃

* PW≤10μs,Duty Cycle≤1%

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain cut-off current	I_{DSS}	V_{DS}=40V,V_{GS}=0			10	μA
Gate leakage current	I_{GSS}	V_{GS}=±20V,V_{DS}=0			±10	μA
Gat cutoff voltage	$V_{GS(off)}$	V_{DS}=10V,I_D=1mA	1.5	2.0	2.5	V
Forward transfer admittance	$\|Y_{fs}\|$	V_{DS}=10V,I_D=42A	30	60		S
Drain to source on-state resistance	$R_{DS(on)1}$	V_{GS}=10V,I_D=42A		4.5	5.6	mΩ
	$R_{DS(on)2}$	V_{GS}=4V,I_D=42A		6.2	8.9	mΩ
Input capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0,f=1MHZ		6100		pF
Output capacitance	C_{oss}			1400		pF
Reverse transfer capacitance	C_{rss}			700		pF
Turn-on delay time	t_{on}	I_D=42A,$V_{GS(on)}$=10V,R_G=10Ω,V_{DD}=20V		120		ns
Rise time	t_r			1800		ns
Turn-off delay time	t_{off}			350		ns
Fall time	tf			440		ns
Total Gate Charge	Q_G	I_D =83A, V_{DD} =32V, V_{GS} = 10 V		110		nC
Gate to Source Charge	Q_{GS}			18		nC
Gate to Drain Charge	Q_{GD}			31		nC