TY Semicondutor® TY

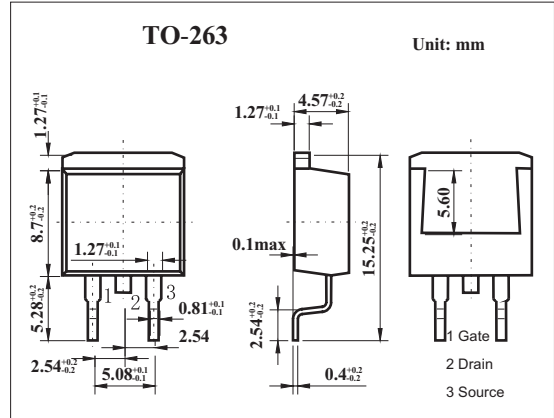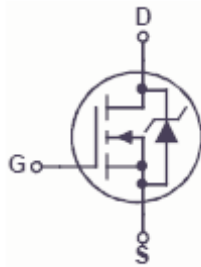# KDB2570(FDB2570)

■ Features

● 22 A, 150 V. $R_{DS(ON)}$ = 80 mΩ @ V_{GS} = 10 V

$R_{DS(ON)}$ = 90 mΩ @ V_{GS} = 6 V

● Low gate charge

● Fast switching speed

● High performance trench technology for extremely

low $R_{DS(ON)}$

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}	150	V
Gate to source voltage	V_{GSS}	±20	V
Drain current-Continuous	I_D	22	A
Drain current-Pulsed	I_{DP}	50	A
Power dissipation	P_D	93	W
Derate above 25℃		0.63	W/℃
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	62.5	℃/W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.6	℃/W
Channel temperature	T_{ch}	175	℃
Storage temperature	T_{stg}	-55 to +175	℃

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain to source breakdown voltage	V_{DSS}	I_D=250μA，V_{GS}=0V	150			V
Drain cut-off current	I_{DSS}	V_{DS}=120V,V_{GS}=0			1	μA
Gate leakage current	I_{GSS}	V_{GS}=±20V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	2.0	2.6	4.0	V
Drain to source on-state resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=11A		61	80	mΩ
		V_{GS}=6V,I_D=10A		63	90	
		V_{GS}=10V,I_D=11A,T_C=125℃		127	175	
On‐State Drain Current	$I_{D(on)}$	V_{GS} = 10 V, V_{DS} = 10 V	25			A
Forward Transconductance	g_{FS}	V_{DS} = 10 V, I_D = 11 A		39		S
Input capacitance	C_{iss}	V_{DS}=75V,V_{GS}=0,f=1MHZ		1911		pF
Output capacitance	C_{oss}			106		pF
Reverse transfer capacitance	C_{rss}			33		pF
Total Gate Charge	Q_g	V_{DS} = 75 V, I_D = 11 A,V_{GS} = 10 V*		40	56	nC
Gate-Source Charge	Q_{gs}			7		nC
Gate-Drain Charge	Q_{gd}			12		nC
Turn-On Delay Time	$t_{d(ON)}$	V_{DD} = 75 V, I_D = 1 A, V_{GS} = 10 V, R_{GEN} = 6 Ω*		12	22	ns
Rise Time	t_r			5	10	ns
Turn-Off Delay Time	$t_{d(OFF)}$			33	53	ns
Fall Time	t_f			23	37	ns
Maximum Continuous Drain-Source Diode Forward Current	I_s				22	A
Source to Drain Diode Voltage	V_{SD}	V_{GS} = 0 V, I_s = 11 A *		0.83	1.3	V

* Pulse Test: Pulse Width ＜ 300μs, Duty Cycle ＜ 2.0%