TY Semicondutor® TY

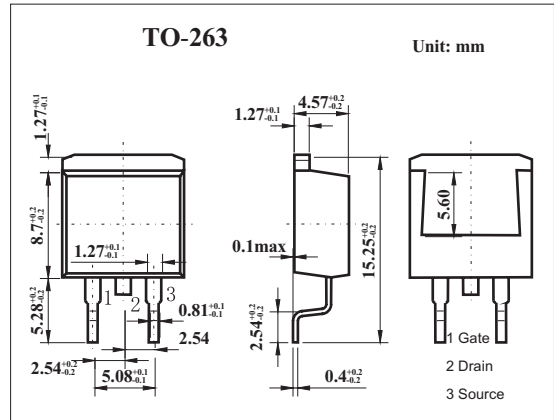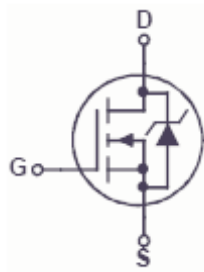# KDB3652 (FDB3652)

■ Features

- ● rDS(ON) = 14mΩ (Typ.), VGS = 10V, ID = 61A
- ● Qg(tot) = 41nC (Typ.), VGS = 10V
- ● Low Miller Charge
- ● Low QRR Body Diode
- ● UIS Capability (Single Pulse and Repetitive Pulse)

TO-263 Unit: mm

1 Gate
2 Drain
3 Source

■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain to source voltage		VDSS	100	V
Gate to source voltage		VGSS	$\pm$20	V
Drain current-Continuous	TC=25℃	ID	61	A
	TA=25℃		9	A
Power dissipation		PD	150	W
Derate above 25℃			1.0	W/℃
Thermal Resistance Junction to Ambient		RθJA	43	℃/W
Thermal Resistance, Junction-to-Case		RθJC	1.0	℃/W
Channel temperature		Tch	175	℃
Storage temperature		Tstg	-55 to +175	℃

KDB3652 (FDB3652)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain to source breakdown voltage	V_{DSS}	I_D=250µA，V_{GS}=0V	105			V
Drain cut-off current	I_{DSS}	V_{DS}=80V,V_{GS}=0			1	µA
		V_{DS}=80V,V_{GS}=0,T_C=150℃			250	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		4.0	V
Drain to source on-state resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=61A		0.014	0.016	Ω
		V_{GS}=6V,I_D=30A		0.018	0.026	
		V_{GS}=10V,I_D=61A,T_C=175℃		0.035	0.043	
Input capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0,f=1MHZ		2880		pF
Output capacitance	C_{oss}			390		pF
Reverse transfer capacitance	C_{rss}			100		pF
Total Gate Charge at 10V	$Q_{g(TOT)}$	V_{GS} = 0V to 10V		41	53	nC
Threshold Gate Charge	$Q_{g(TH)}$	V_{GS} = 0V to 2V		5	6.5	nC
Gate to Source Gate Charge	Q_{gs}	V_{DS} = 50 V, I_D = 61A,I_g=1.0mA		15		nC
Gate Charge Threshold to Plateau	Q_{gs2}			10		nC
Gate to Drain "Miller" Charge	Q_{gd}			10		nC
Turn-On Time	t_{ON}	V_{DD} = 50 V, I_D = 61A, V_{GS} = 10 V, R_{GEN} = 6.8 Ω			146	ns
Turn-On Delay Time	$t_{d(ON)}$			12		ns
Rise Time	t_r			85		ns
Turn-Off Delay Time	$t_{d(OFF)}$			26		ns
Fall Time	t_f			45		ns
Turn-Off Time	t_{OFF}				107	ns
Source to Drain Diode Voltage	V_{SD}	I_{SD}=61A			1.25	V
		I_{SD}=30A			1.0	V
Reverse Recovery Time	t_{rr}	I_{SD} = 61A, dI_{SD}/dt =100A/µs			62	ns
Reverse Recovered Charge	Q_{RR}	I_{SD} = 61A, dI_{SD}/dt =100A/µs			45	nC