General Description

SFGMOS® 8: 10 T ML PO ZY: TPYLW PX TNZYO NZ YT P OPaTNP OP TRY Z LNSTPaP low $R_{DS(ON)}$, low gate charge, fast switching and excellent avalanche characteristics. The low V_{th} series is specially designed to use in synchronous rectifier [illegible] with low driving voltage.

Features

- Low R_{DS}

Absolute Maximum Ratings at T_j=25°C unless otherwise noted

Parameter	Symbol	Value	Unit
Drain source voltage	V_{DS}	100	V
Gate source voltage	V_{GS}	±20	V
Continuous drain current[1], T_C=25 °C	I_D	60	A
Pulsed drain current[2], T_C=25 °C	$I_{D,\ pulse}$	180	A
Continuous diode forward current[1], T_C=25 °C	I_S	60	A
Diode pulsed current[2], T_C=25 °C	$I_{S,\ Pulse}$	180	A
Power dissipation[3], T_C=25 °C	P_D	107	W
Single pulsed avalanche energy[5]	E_{AS}	65	mJ
Operation and storage temperature	T_{stg} T_j	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal resistance, junction-case	R 5.	1.17	°C/W
Thermal resistance, junction-ambient[4]	R 5,	62	°C/W

Electrical Characteristics at T_j=25°C unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Drain-source breakdown voltage	BV_{DSS}	100			V	V_{GS}=0 V, I_D=250 A
Gate threshold voltage	$V_{GS(th)}$	1.5		2.5	V	V_{DS}=V_{GS}, I_D=250 A
Drain-source on-state resistance	$R_{DS(ON)}$		9	10	X	V_{GS}=10 V, I_D=30 A
Drain-source on-state resistance	$R_{DS(ON)}$		12	14	X	V_{GS}=4.5 V, I_D=12 A
Gate-source leakage current	I_{GSS}			100	nA	V_{GS}=20 V
				-100		V_{GS}=-20 V
Drain-source leakage current	I_{DSS}			1	A	V_{DS}=100 V, V_{GS}=0 V
Gate resistance	R_G		5.5			(8 3e : PYOLT

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		1998		pF	V_{GS}=0 V, V_{DS}=50 V, (kHz
Output capacitance	C_{oss}		322		pF	
Reverse transfer8001f444d276.(						

Electrical Characteristics Diagrams

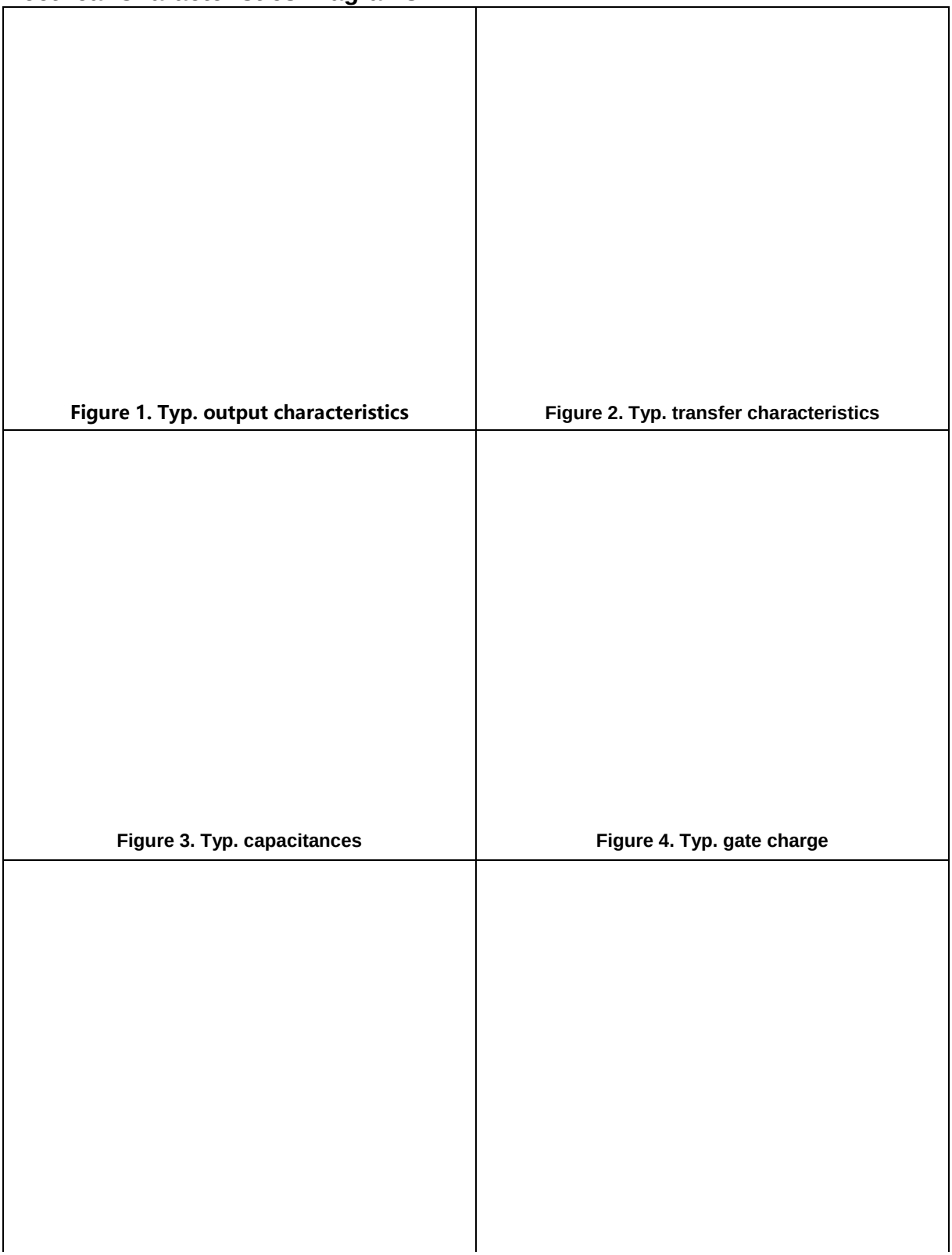

Figure 1. Typ. output characteristics

Figure 2. Typ. transfer characteristics

Figure 3. Typ. capacitances

Figure 4. Typ. gate charge

Figure 5. Drain-

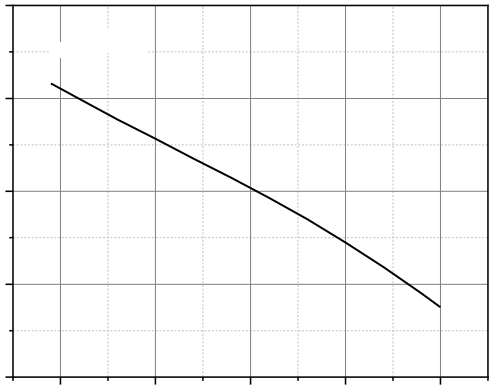

Figure 7. Threshold voltage

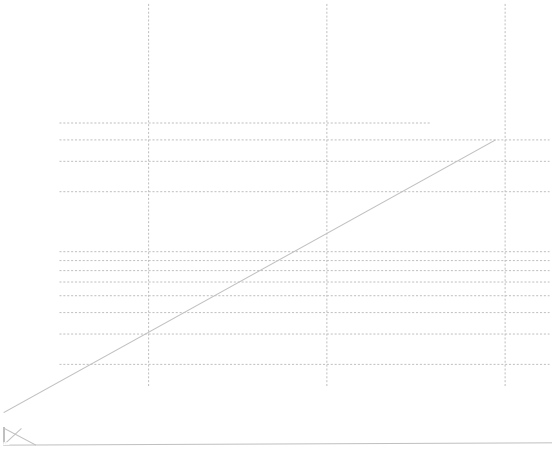

Figure 8. Forward characteristic of body diode

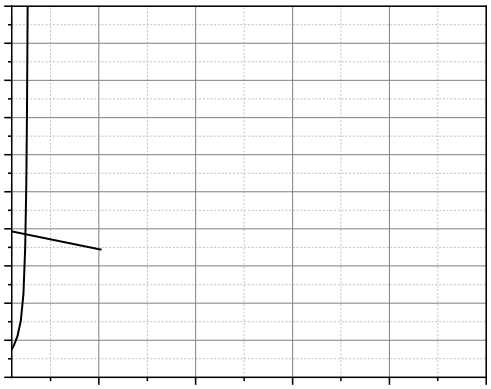

Figure 9. Drain-source on-state resistance

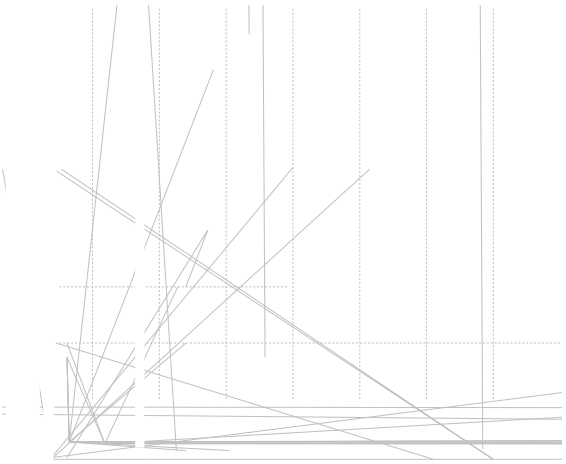

Figure 10. Drain current

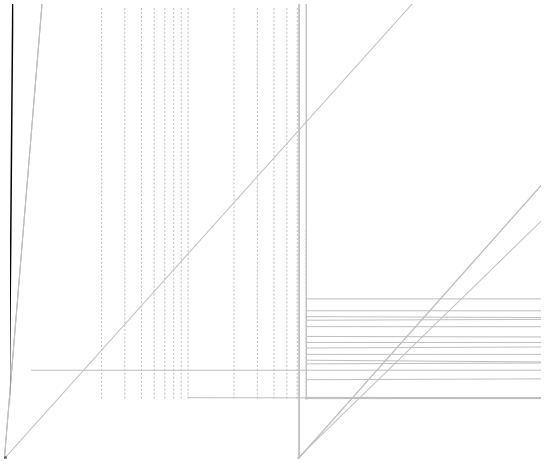

Figure 11. Safe operation area T_C=25 °C

Test circuits and waveforms

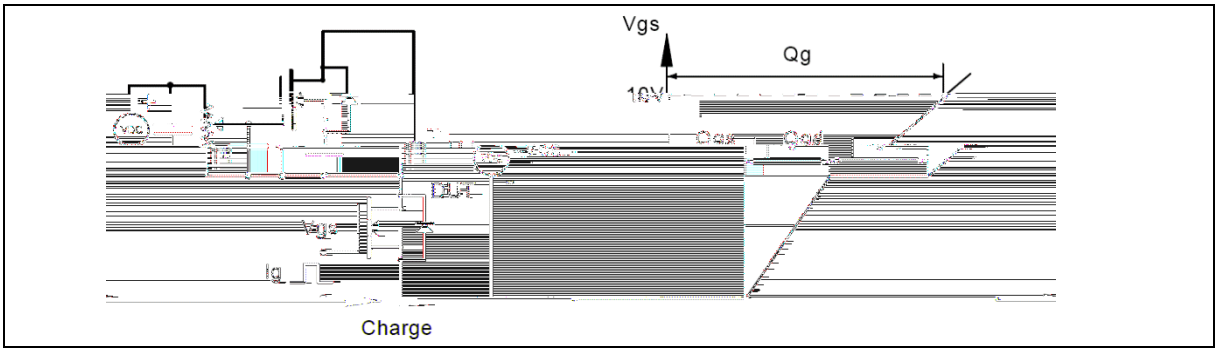

Figure 1. Gate charge test circuit & waveform

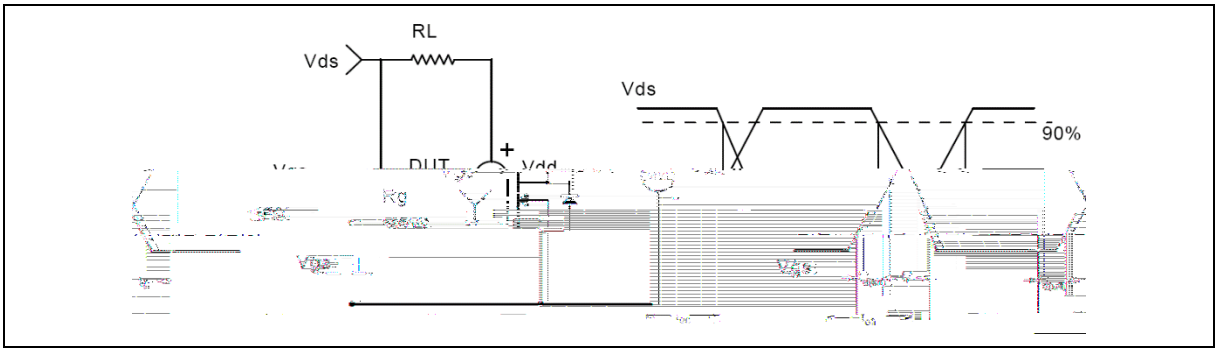

Figure 2. Switching time test circuit & waveforms

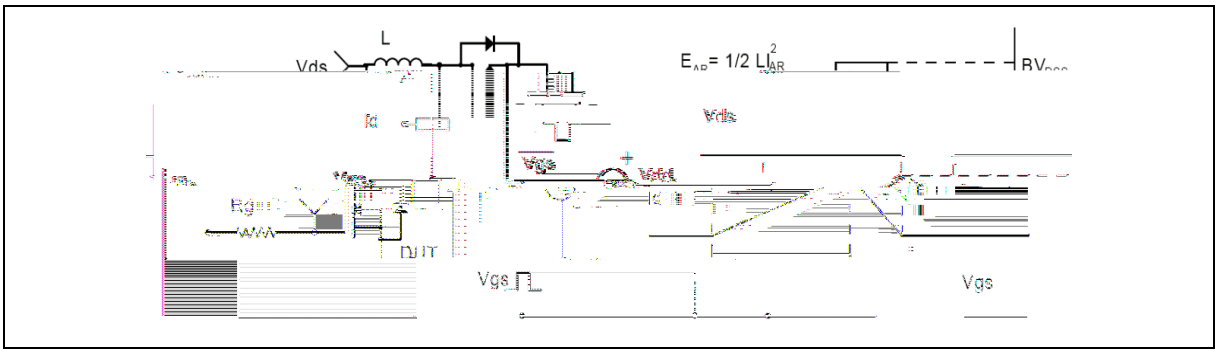

Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

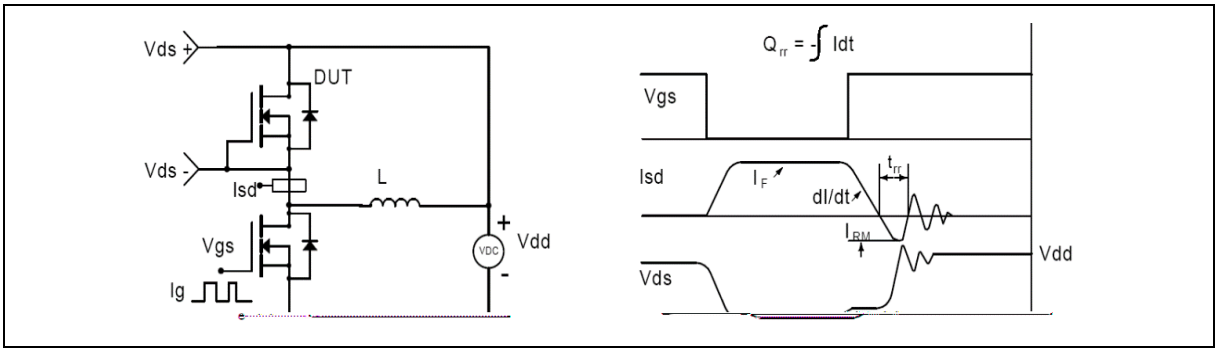

Figure 4. Diode reverse recovery test circuit & waveforms

Package Information

Symbol	mm		
	Min	Nom	Max
A	4.40	4.50	4.60
A1	1.27	1.30	1.

Ordering Information

Package Type	Units/ Tube	Tubes / Inner Box	Units/ Inner Box	Inner Boxes/ Carton Box	Units/ Carton Box
TO220-J	50	20	1000	5	5000

Product Information

Product	Package	Pb Free	RoHS	Halogen Free
SFG10S10PF	TO220	yes	yes	yes

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