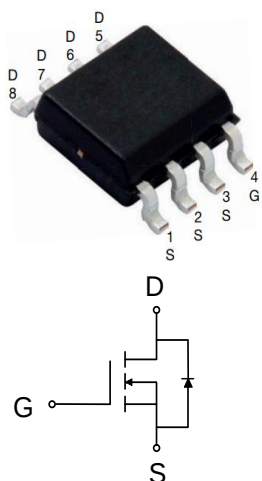


SGT N-Channel Power MOSFET

MTR017N10P8

SOP-8



Features

- Low on-resistance($R_{DS(on)}$)
- Low C_{rss}
- Fast switching
- Pb-free lead plating; RoHS compliant

Applications

- Synchronous Rectification for AC-DC Quick Charger
- DC/DC in Telecoms and Industrial
- Hard Switching and High Speed Circuit

Maximum ratings, at $T_A = 25^\circ\text{C}$, unless otherwise specified

Symbol	Parameter		Rating	Unit
V _{(BR)DSS}	Drain-Source breakdown voltage		100	V
V _{GS}	Gate-Source voltage		±20	V
I _D	Continuous drain current	T _C = 25°C	13	A
		T _C = 100°C	8	A
I _{DM}	Pulse drain current tested ¹	T _C = 25°C	52	A
E _{AS}	Avalanche energy, single pulsed ²		93	mJ
P _D	Maximum power dissipation	T _C = 25°C	5.2	W
T _{STG} , T _J	Storage and Junction Temperature Range		-55 to 150	°C

Thermal Characteristics

Symbol	Parameter	Rating	Unit
R _{θJA}	Thermal Resistance, Junction-to-Ambient	60	°C/W

Electrical Characteristics

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
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Static Electrical Characteristics @T_j=25°C (unless otherwise stated)

V(BR) _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	100	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =100V, V _{GS} =0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1	--	2.5	V
R _{DS(on)}	Drain-Source On-State Resistance ³	V _{GS} =10V, I _D =10A	--	16	17	mΩ
		V _{GS} =4.5V, I _D =10A	--	21	25	mΩ
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =20A	--	38	--	S
V _{SD}	Diode forward voltage drop	I _S =20A, V _{GS} =0V	--	0.9	1.3	V

Dynamic Electrical Characteristics@T_j = 25°C (unless otherwise stated)

C _{iss}	Input Capacitance	V _{DS} =50V, V _{GS} =0V, f=1MHz	--	930	--	pF
C _{oss}	Output Capacitance		--	204	--	pF
C _{rss}	Reverse Transfer Capacitance		--	6	--	pF
Q _g	Total Gate Charge	V _{DD} =50V, I _D =20A, V _{GS} =10V	--	23.5	--	nC
Q _{gs}	Gate-Source Charge		--	1.54	--	nC
Q _{gd}	Gate-Drain Charge		--	12.9	--	nC

Switching Characteristics

Td(on)	Turn-on Delay Time	V _{DD} =50V, V _{GS} =10V R _D =5Ω, R _G =10Ω	--	10	--	ns
Tr	Turn-on Rise Time		--	24	--	ns
Td(off)	Turn-Off Delay Time		--	16	--	ns
Tf	Turn-Off Fall Time		--	5	--	ns

Notes:

1. Repetitive Rating:pulse width limited by maximum junction temperature.
2. E_{AS} is the Maximum avalanche energy ,starting T_J=25℃,L=0.5mH,R_G=25Ω,100%FT tested at (40~50%)*I_{AS},
I_{AS} is Maximum avalanche breakdown current.
3. Pulse width≤300us;duty cycles≤2%.

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Typical Performance Characteristics

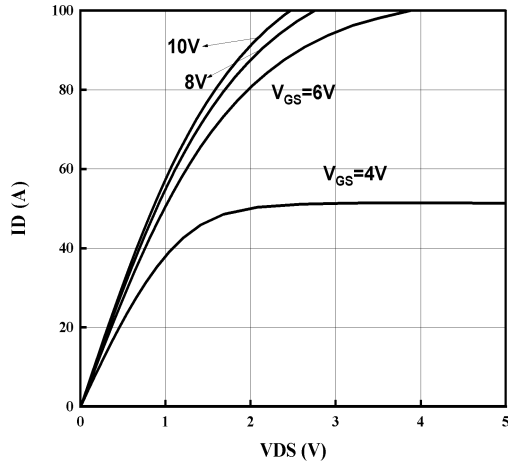


Fig1. Typical Output Characteristics

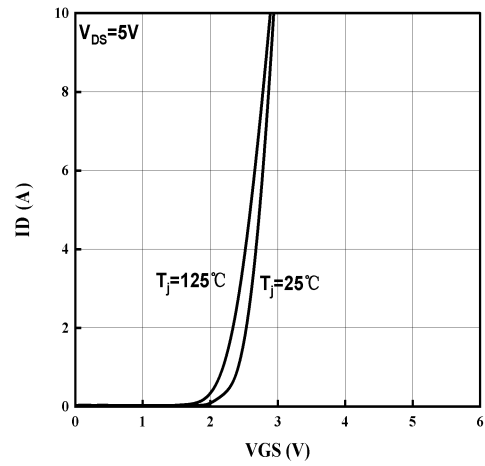


Fig2. Typical Transfer Characteristics

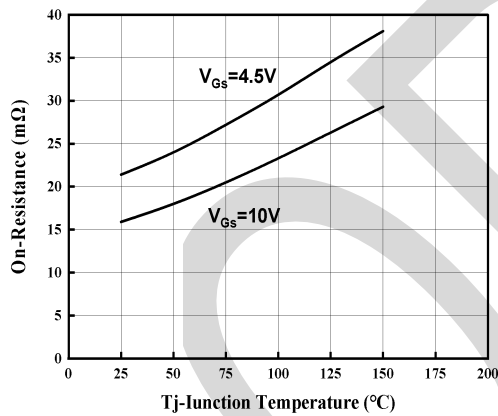


Fig3. On-Resistance Vs. Temperature

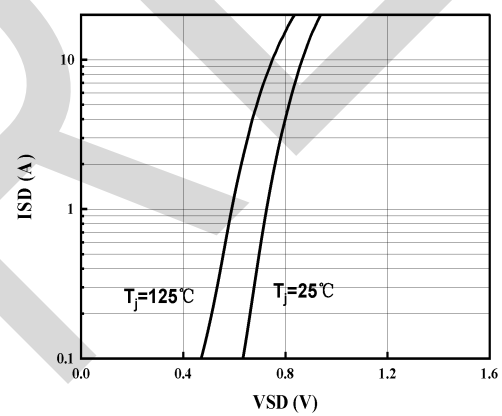


Fig4. Typical Source-Drain Diode Forward Voltage

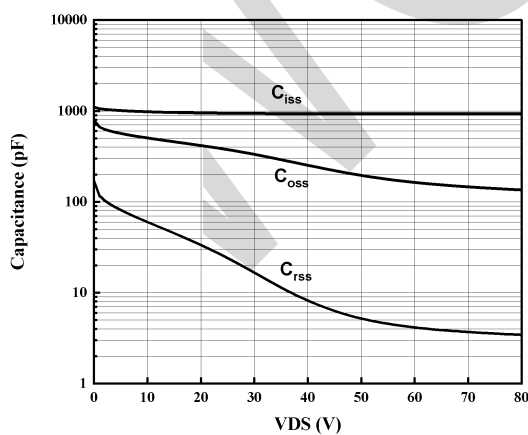


Fig5. Typical Capacitance

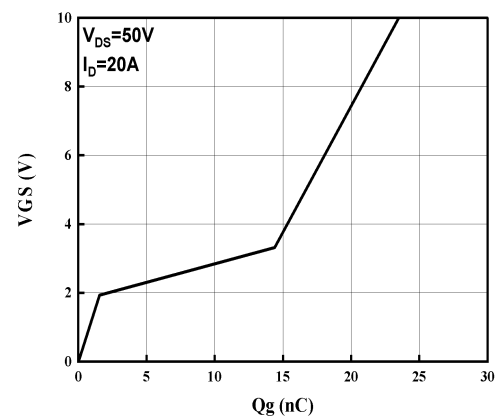


Fig6. Typical Gate Charge

Typical Performance Characteristics

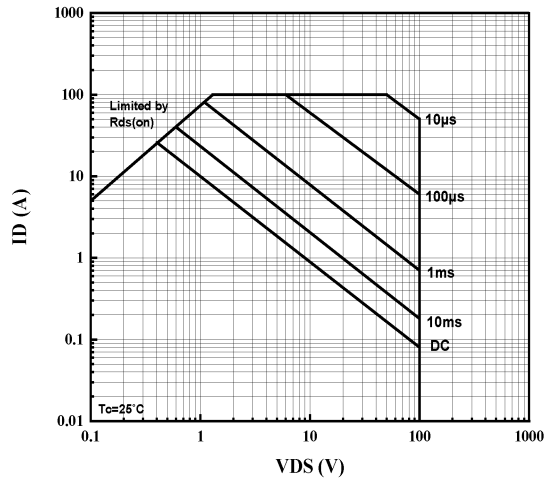


Fig7. Safe Operating Area

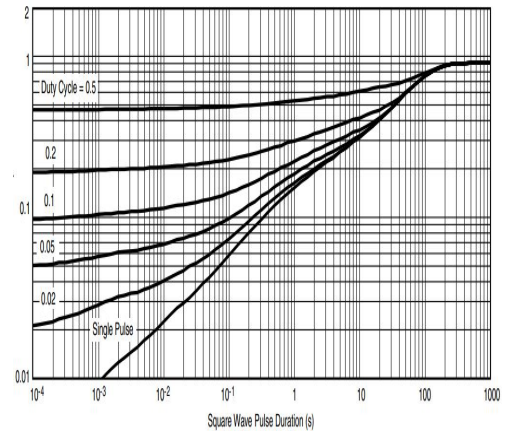
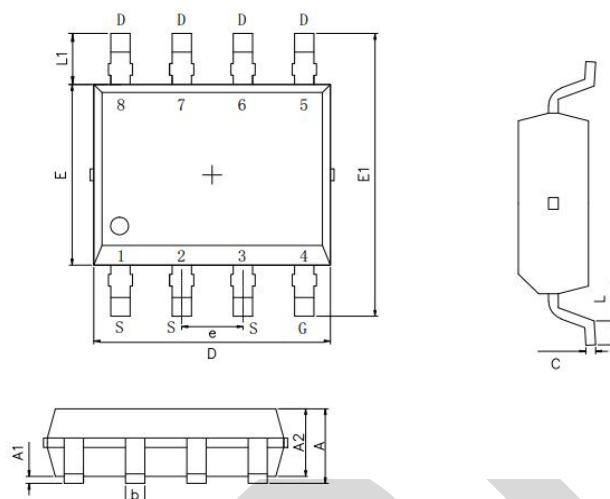


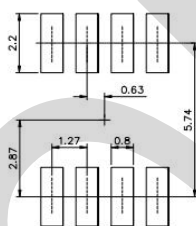
Fig8. Normalized transient thermal impedance

PACKAGE OUTLINE DIMENSIONS

SOP-8 PACKAGE OUTLINE



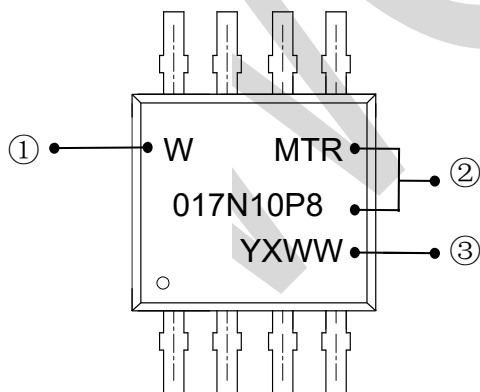
RECOMMENDED LAND PATTERN



UNIT: mm

	MIN	NOM	MAX
A	1.35	1.65	1.75
A1	0.10	0.15	0.25
A2	1.25	1.45	1.65
b	0.30	0.40	0.50
c	0.17	0.20	0.25
D	4.80	4.90	5.10
E	3.72	3.87	4.02
E1	5.95	6.10	6.25
e		1.27BCS	
L	0.40	0.65	0.90
L1	0.92	1.07	1.22

Marking Information



- ①W : Company's trademark
- ②Product model : MTR017N10P8
- ③PDC information :

Y X WW

WW:Week code(01 to 53)

X:Internal identification code

Y:Year code(ex:0=2020)