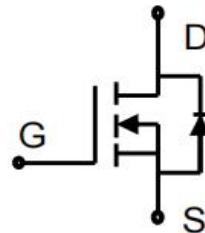


N-Channel SGT MOSFET 40V/280A

Parameter	Value	Unit
V _{DS}	40	V
V _{GS}	±20	V
R _{DS(on)}	0.75	mΩ
I _D	280	A


PDFN5x6
FEATURES

- Split gate trench MOSFET technology
- Fast switching
- Low gate charge & Rdson

APPLICATIONS

- PWM application
- Hard switched and high frequency circuit
- Power management

MAXIMUM RATED VALUES (at TC=25°C unless otherwise specified)

Parameter	Symbol	Maximum	Units
Drain to Source Voltage	V _{DSS}	40	V
Gate to Source Voltage	V _{GSS}	±20	V
Drain Current (DC)	I _D	280	A
Drain Current (Pulse)	I _{DP}	920	A
Single Pulse Avalanche Energy ^{Note 2}	E _{AS}	1089	mJ
Total Power Dissipation	P _D	300	W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

Note: 1. Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

2. The test condition is V_{DD}=20V, V_{GS}=10V, L=0.5mH, RG=25Ω

THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Ambient	R _{thJA}	0.41	°C/W

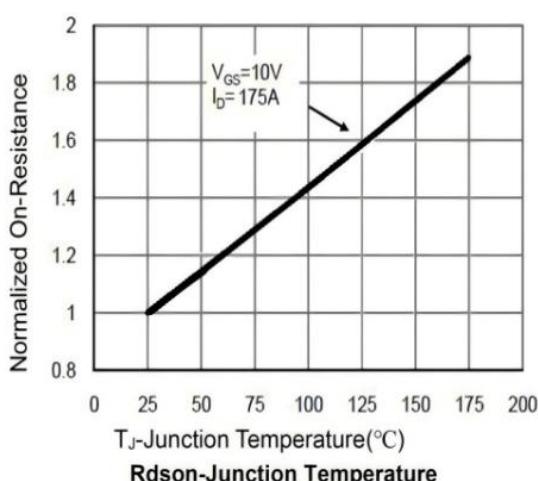
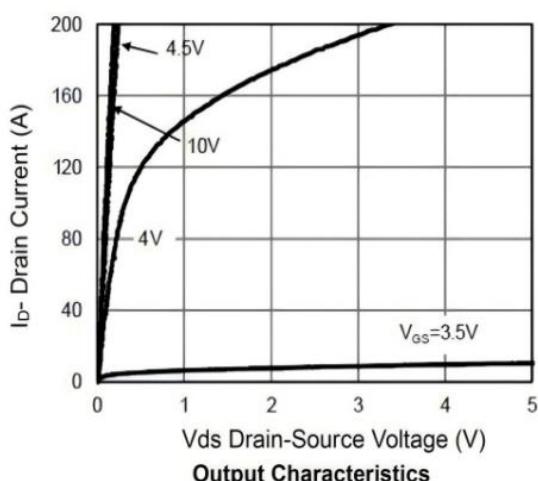
ELECTRICAL CHARACTERISTICS (at T_J = 25°C unless otherwise specified)

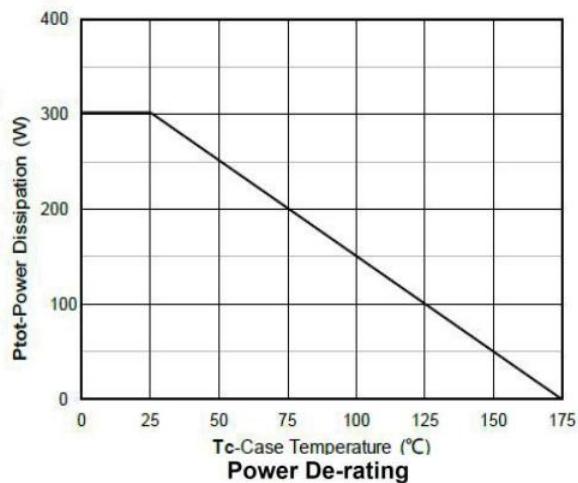
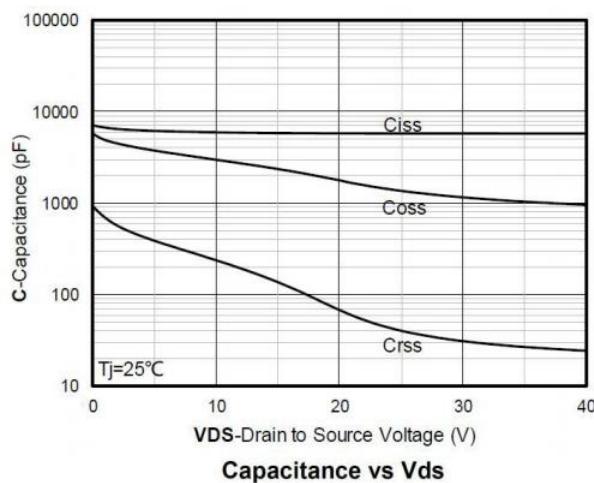
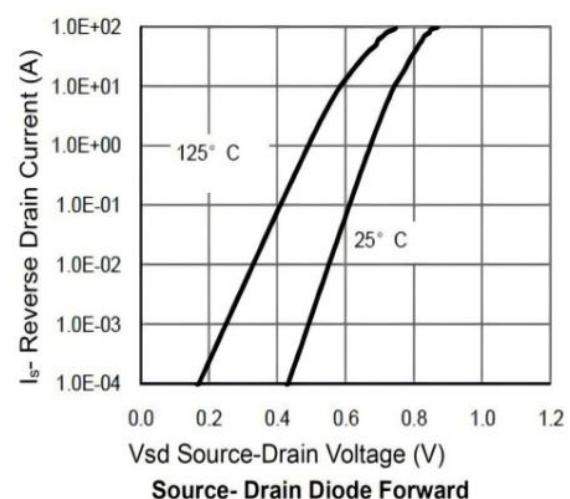
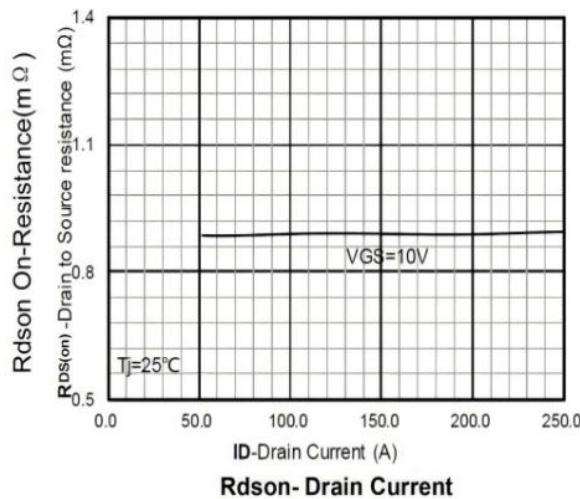
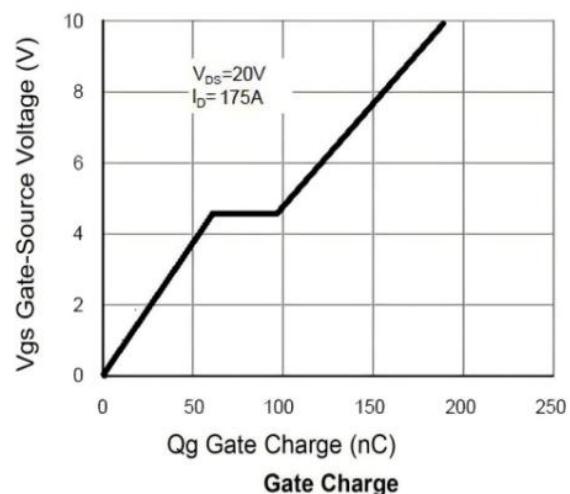
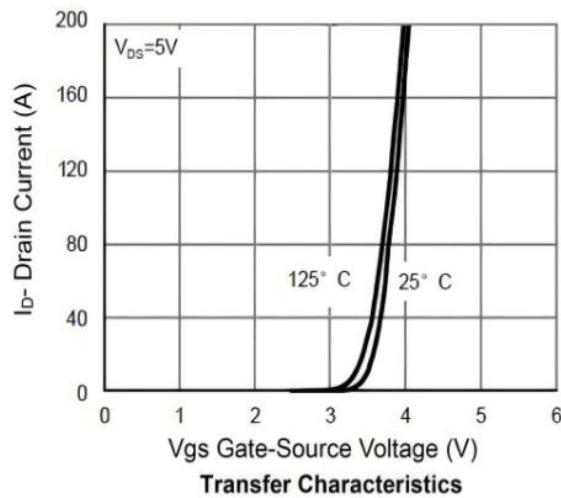
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain to Source Breakdown Voltage	V _{(BR)DSS}	I _D =250 μA, V _{GS} =0V	40	47	-	V
Continuous Drain Current	I _{D(Device Ref)}	T _J =25°C	-	-	280	A

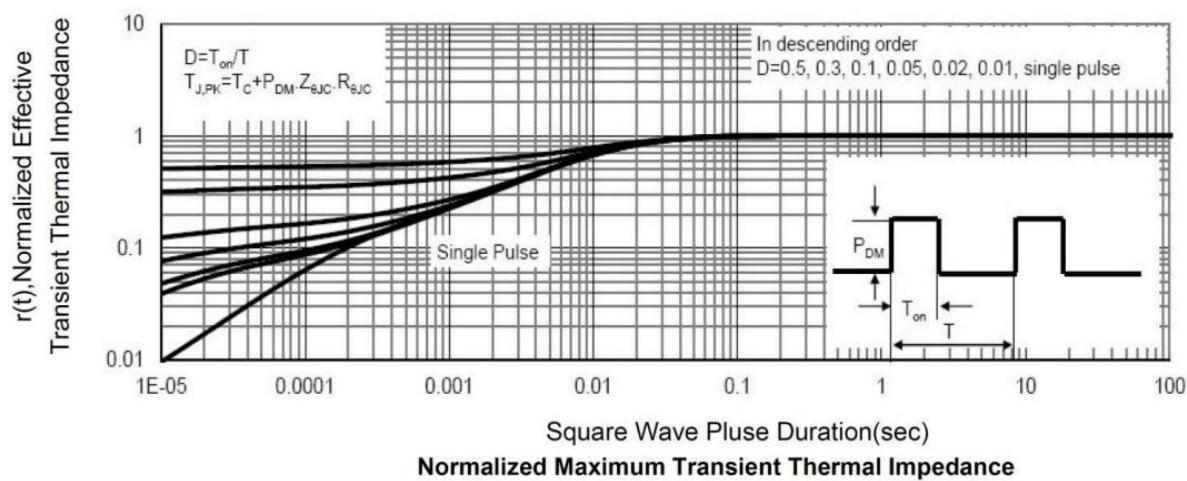
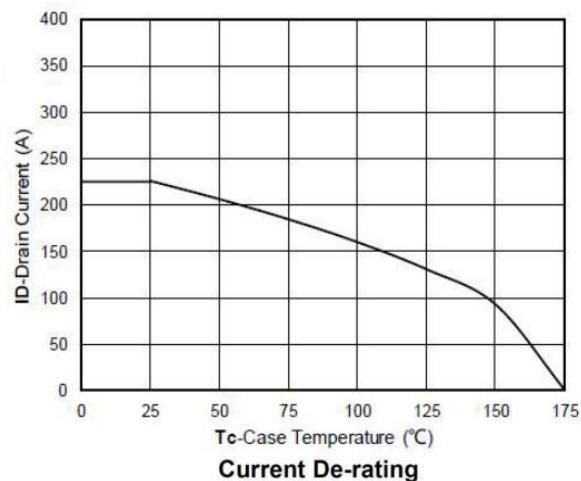
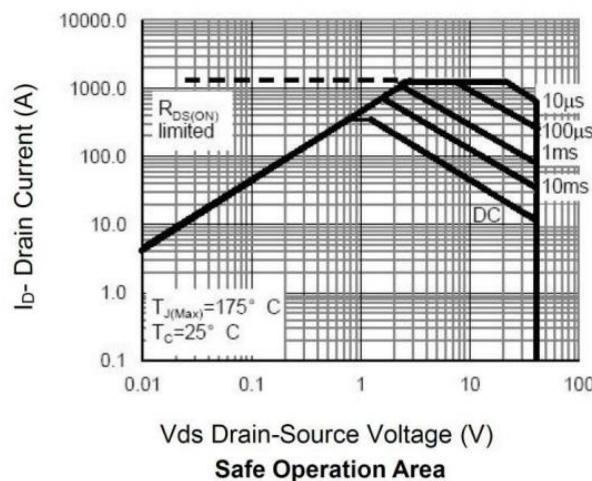
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V, V_{GS}=0V$	-	-	1	μA
Gate to Source Leakage Current	I_{GS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.6	2.5	V
Static Drain to Source On-State Resistance	$R_{DS(on)}(FT)$	$I_D=20A, V_{GS}=10V$	-	0.75	0.9	$m\Omega$
		$I_D=20A, V_{GS}=4.5V$	-	1.15	1.3	$m\Omega$
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=20V, Frequency=1.0MHz$	-	5500	-	pF
Output Capacitance	C_{oss}		-	1850	-	pF
Reverse Transfer Capacitance	C_{rss}		-	65	-	pF
Turn-ON Delay Time	$t_{d(on)}$	$V_{DS}=20V, I_D=85A, V_{GS}=10V, R_G=1.6\Omega$	-	13.5	-	ns
Rise Time	t_r		-	8.8	-	ns
Turn-OFF Delay Time	$t_{d(off)}$		-	52	-	ns
Fall Time	t_f		-	9.6	-	ns
Total Gate Charge	Q_g	$V_{DS}=20V, V_{GS}=10V, I_D=85A$	-	128	-	nC
	Q_{gs}		-	19	-	nC
	Q_{gd}		-	12	-	nC
Diode Forward Voltage	V_{FSD}	$I_S=1A, V_{GS}=0, T_j=25^\circ C$	-	-	1.2	V
Reverse Recovery Time	T_{rr}	$I_S=50A, di/dt=100A/\mu s, T_j=25^\circ C$	-	55	-	ns
Reverse Recovery Charge	Q_{rr}		-	53	-	nC

Note: Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

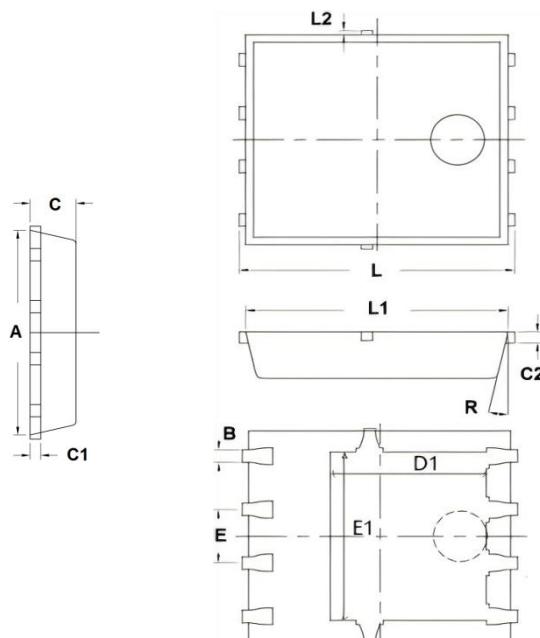
CHARACTERISTICS DIAGRAMS







PACKAGE OUTLINE



Dim.	Min.	Max.
A	4.8	5.2
B	0.25	0.35
C	1	1.2
C1	Typ0.254	
C2	Typ0.254	
D1	3.35	3.81
E	Typ1.27	
E1	3.9	4.18
L	6	6.3
L1	5.7	6
L2	MAX 0.2	
R	Typ 13°	
All Dimensions in millimeter		

***Important Usage Information and Disclaimer**

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