

FEATURES:

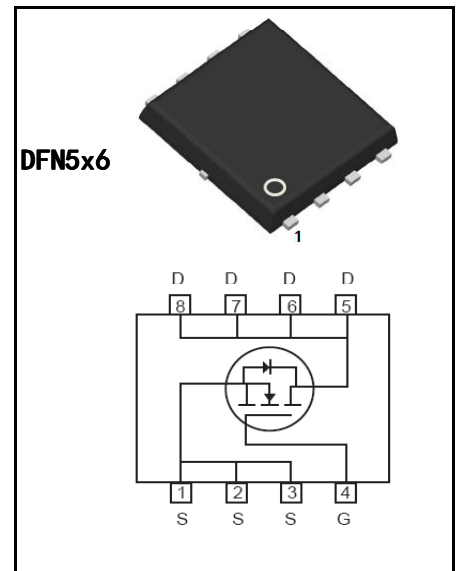
- ADVANCED TRENCH MOSFET PROCESS TECHNOLOGY
- SPECIAL DESIGNED FOR PWM, LOAD SWITCHING AND GENERAL PURPOSE APPLICATIONS
- ULTRA LOW NO-RESISTANCE WITH LOW GATE CHARGE
- FAST SWITCHING AND REVERSE BODY RECOVERY
- 175°C OPERATING TEMPERATURE

DESCRIPTION

It utilizes the latest trench processing techniques to achieve the high cell density and reduces the on-resistance with high repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for use in power switching application and a wide variety of other applications

MAXIMUM RATINGS (T_c=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Drain-source Voltage	VDS	150	V
gate-source Voltage	VGS	±20	V
Continuous Drain Current (T _C =25°C)	ID	60	A
Drain Current-Pulsed	IDM	120	A
Total Dissipation	PD	125	W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55-150	°C
Single Pulse Avalanche Energy (L=0.5mH)	EAS	400	mJ

MECHANICAL

ELECTRONIC CHARACTERISTICS (T_c=25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Drain-source Breakdown Voltage	BVDSS	VGS=0V, ID=250 μA	150		V
Gate Threshold Voltage	VGS (TH)	VGS=VDS, ID=250 μA	2	4	V
Drain-source Leakage Current	IDSS	VDS=150V, VGS=0V		1	uA
Drain-Source Diode Forward Voltage	VSD	VGS=0V, IS=20A		1.2	V
Gate-body Leakage Current (VDS=0)	IGSS	VGS=±20V		±100	nA
Static Drain-source On Resistance	RDS (ON)	VGS=10V, ID=20A		19	mΩ
Thermal Resistance Junction-case	RthJ-C			1	°C/W

■ DYNAMIC CHARACTERISTICS (T_c=25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Input Capacitance	C _{iss}	V _{gsAcFreq} =1.0MHz, V _{dsDc} =35V	-	2400	-	pF
output Capacitance	C _{oss}		-	185	-	pF
Reverse Transfer Capacitance	C _{rss}		-	8	-	pF
Gate resistance	R _G	V _{gsDCBias} =0V, Speed=MED	-	3.2	-	Ω

注: C_{iss}、C_{oss}、C_{rss}、R_G使用绍兴宏邦电子T342栅极等效电阻测试系统测试(美军标)。

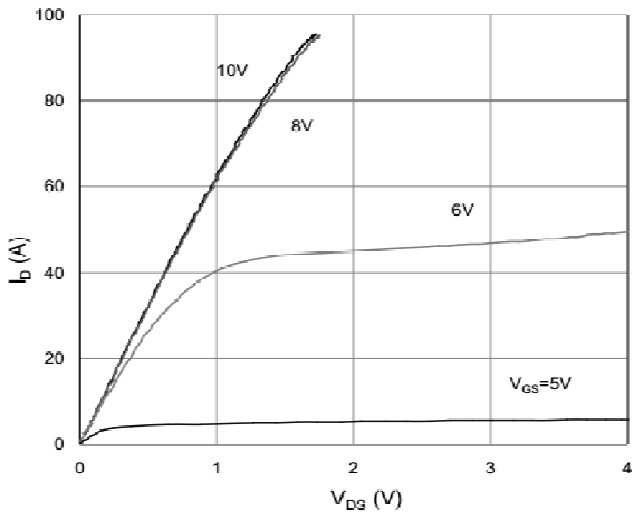
■ SWITCHING CHARACTERISTICS (T_c=25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Turn-On Delay Time	t _{d(on)}	V _{DD} =75V, I _D =20A V _{GS} =10V, R _G =10Ω	-	10	-	ns
Turn-On Rise Time	t _r		-	29	-	ns
Turn-Off Delay Time	t _{d(off)}		-	16	-	ns
Turn-Off Rise Time	t _f		-	15	-	ns
Total Gate Charge	Q _g	V _{DS} =75V, I _D =20A, V _{GS} =10V	-	27	-	nC
Gate-Source Charge	Q _{gs}		-	9	-	nC
Gate-Drain Charge	Q _{gd}		-	2	-	nC

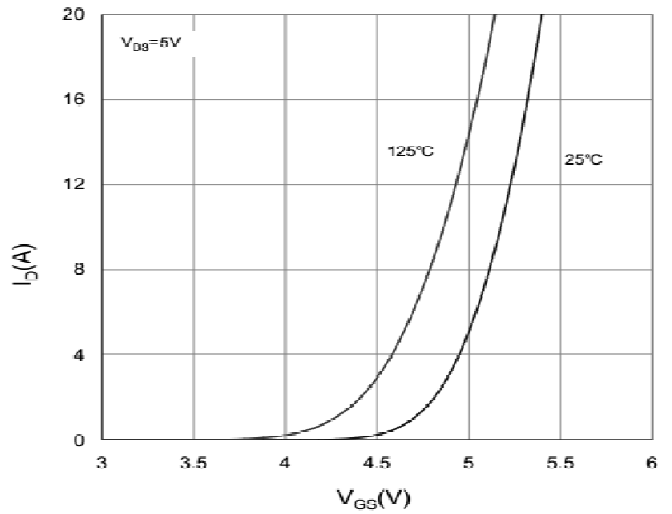
■ DRAIN-SOURCE DIODE MAXIMUM RATINGS AND CHARACTERISTICS (T_c=25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =20A	-	-	1.2	V
Reverse Recovery Time	t _{rr}	V _R =75V, I _F =20A, di/dt=100A/μs	-	90	-	ns
Reverse Recovery Charge	Q _{rr}		-	234	-	nC

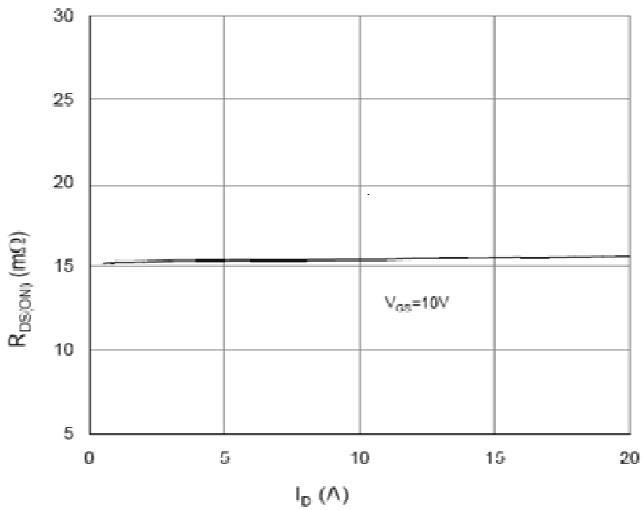
CHARACTERISTICS CURVE



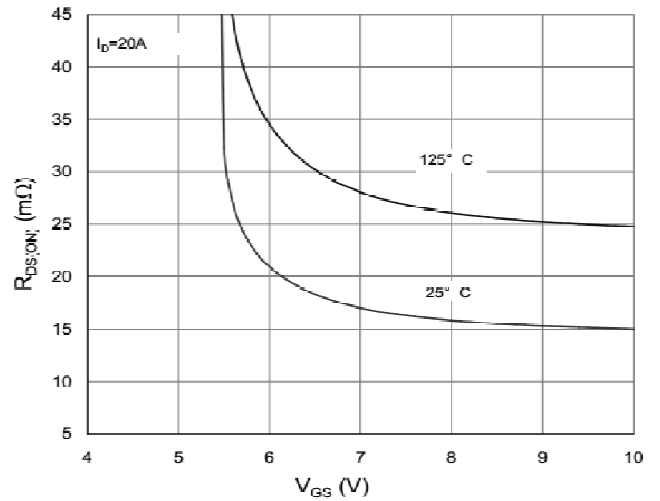
Output Characteristics



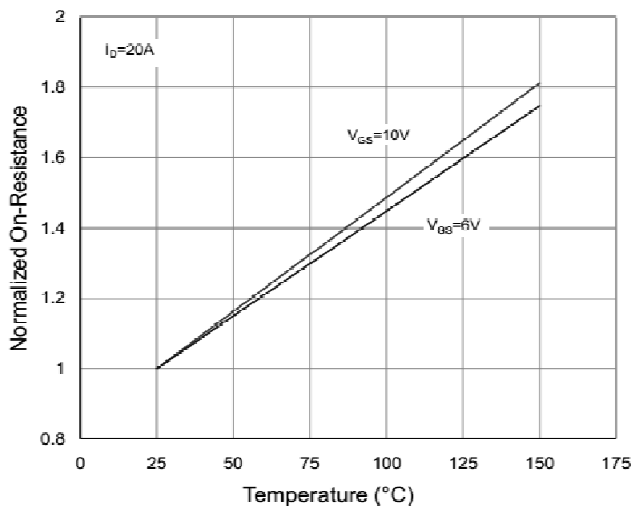
Transfer Characteristics



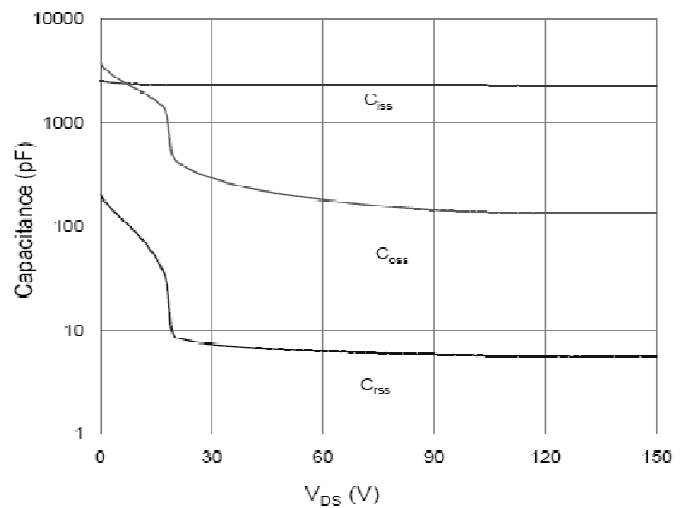
On Resistance Vs Drain Current



On Resistance Vs Gate Source Voltage

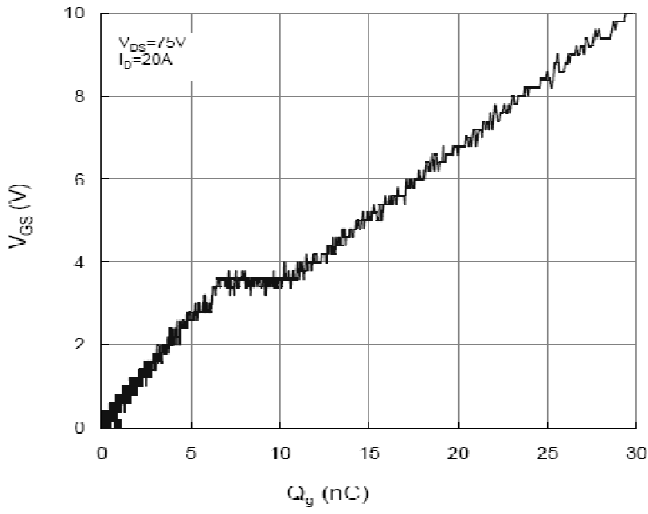


Rdson-JunctionTemperature

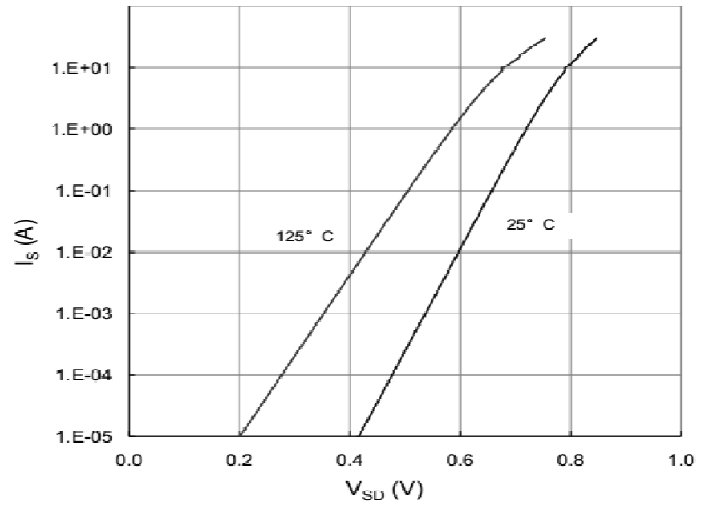


Capacitance

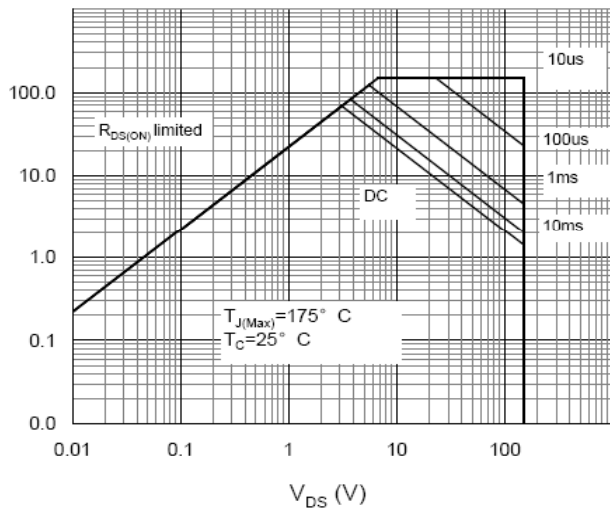
CHARACTERISTICS CURVE



Gate Charge Waveform



Source-Drain Diode Forward Voltage



Maximum Safe Operating Area

DFN5X6-8L MECHANICAL DATA

UNIT: mm

SYMBOL	MIN	NOM	MAX	SYMBOL	MIN	NOM	MAX
A	0.90		1.10	k	1.15		1.35
A3	0.15		0.30	b	0.20		0.40
D	4.90		5.10	e	1.15		1.35
D1	3.90		4.10	L	0.50		0.65
D2	4.75		5.05	L1	0.43		0.55
E	5.85		6.15	H	0.55		0.68
E1	3.35		3.55	θ	8°		12°
E2	5.55		5.85				

