

**DESCRIPTION**

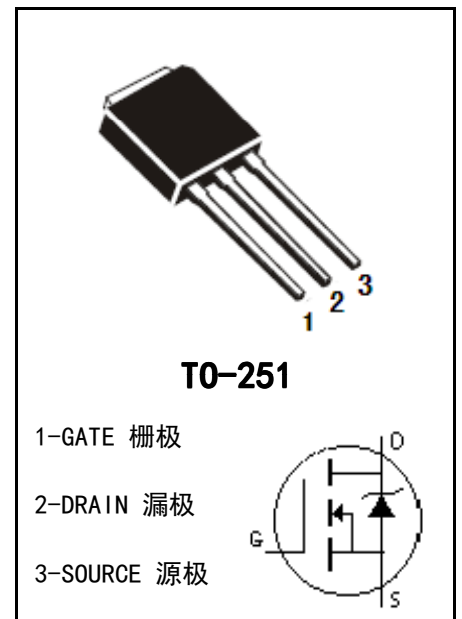
- ELECTRONIC BALLAST
- ELECTRONIC TRANSFORMER
- SWITCH MODE POWER SUPPLY

**FEATURES:**

- LOW THERMAL RESISTANCE
- HIGH INPUT RESISTANCE
- FAST SWITCHING
- ROHS COMPLIANT

**MAXIMUM RATINGS (T<sub>c</sub>=25°C)**

PARAMETER	SYMBOL	VALUE	UNIT
Drain-source Voltage	VDS	500	V
gate-source Voltage	VGS	±30	V
Continuous Drain Current (T <sub>C</sub> =25°C)	ID	5	A
Drain Current-Pulsed	IDM	20	A
Total Dissipation	PD	48	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55-150	°C
Single Pulse Avalanche Energy	EAS	300	mJ

**MECHANICAL**

**ELECTRONIC CHARACTERISTICS (T<sub>c</sub>=25°C)**

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Drain-source Breakdown Voltage	BVDSS	VGS=0V, ID=250 μA	500		V
Gate Threshold Voltage	VGS (TH)	VGS=VDS, ID=250 μA	2	4	V
Drain-source Leakage Current	IDSS	VDS=500V, VGS=0V		25	uA
Drain-Source Diode Forward Voltage	VSD	VGS=0V, IS=5A		1.6	V
Gate-body Leakage Current (VDS = 0)	IGSS	VGS=±30V		±100	nA
Forward Transconductance	gfs	Vds=10V Id=2.5A	1.5		S
Static Drain-source On Resistance	RDS (ON)	VGS=10V, ID=2.5A		1.5	Ω
Thermal Resistance Junction-case	RthJ-c			2.6	°C/W

**■ DYNAMIC CHARACTERISTICS (T<sub>c</sub>=25°C)**

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f=1.0MHz	-	1100	1500	pF
output Capacitance	C <sub>oss</sub>		-	70	105	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		-	11	16	pF

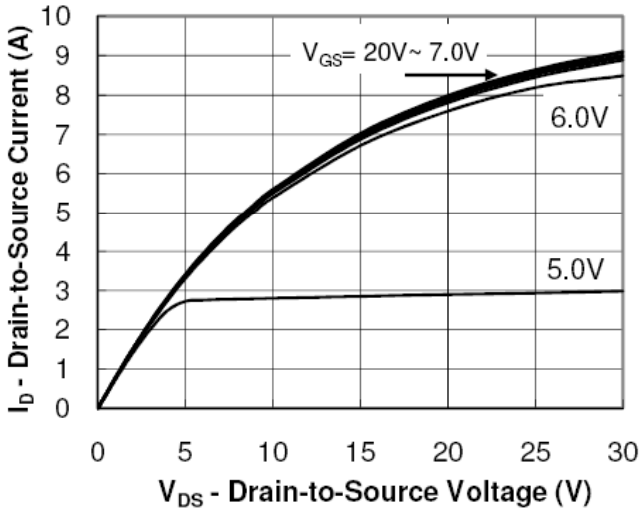
**■ SWITCHING CHARACTERISTICS (T<sub>c</sub>=25°C)**

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =300V, I <sub>D</sub> =5.0A, R <sub>G</sub> =25Ω	-	20	40	ns
Turn-On Rise Time	t <sub>r</sub>		-	25	50	ns
Turn-Off Delay Time	t <sub>d(off)</sub>		-	20	90	ns
Turn-Off Rise Time	t <sub>f</sub>		-	25	50	ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =480V, I <sub>D</sub> =5.0A, V <sub>GS</sub> =10V	-	26	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	4	-	nC
Gate-Drain Charge	Q <sub>gd</sub>		-	15	-	nC

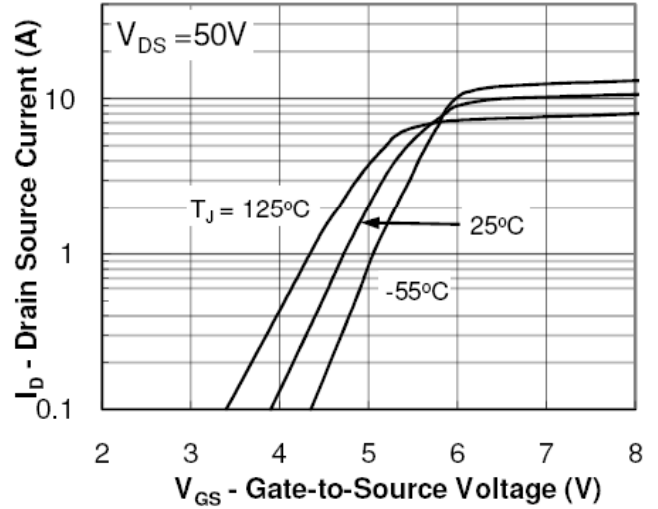
**■ DRAIN-SOURCE DIODE MAXIMUM RATINGS AND CHARACTERISTICS (T<sub>c</sub>=25°C)**

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Max. Diode Forward Current	I <sub>s</sub>		-	-	5	A
Max. Pulsed Forward Current	I <sub>SM</sub>		-	-	20	A
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =5.0A	-	-	1.6	V
Reverse Recovery Time	t <sub>rr</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =5.0A, dI <sub>F</sub> /dt=100A/μs	-	220	-	ns
Reverse Recovery Charge	Q <sub>rr</sub>		-	1	-	μC

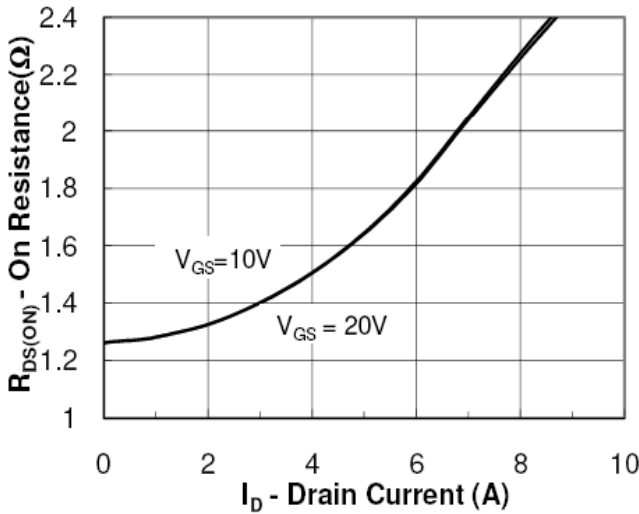
**CHARACTERISTICS CURVE**



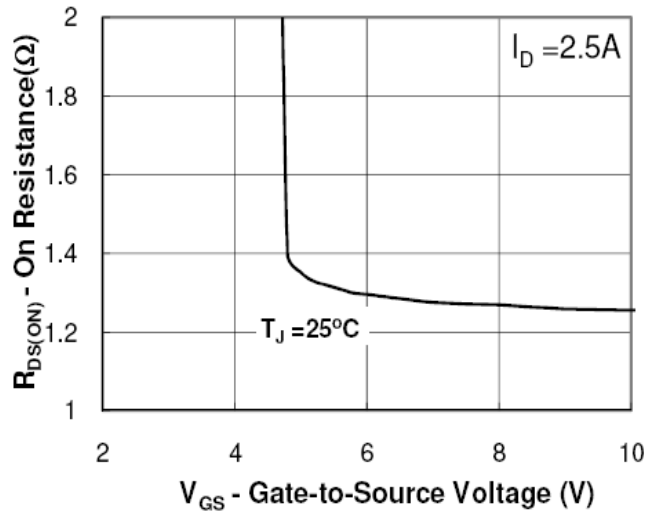
**Output Characteristic**



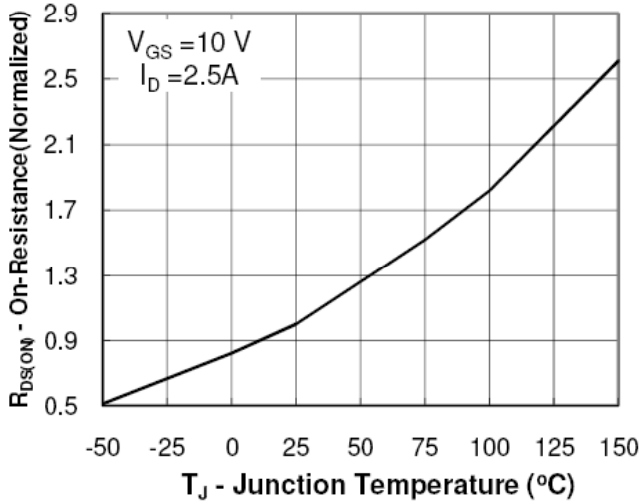
**Transfer Characteristic**



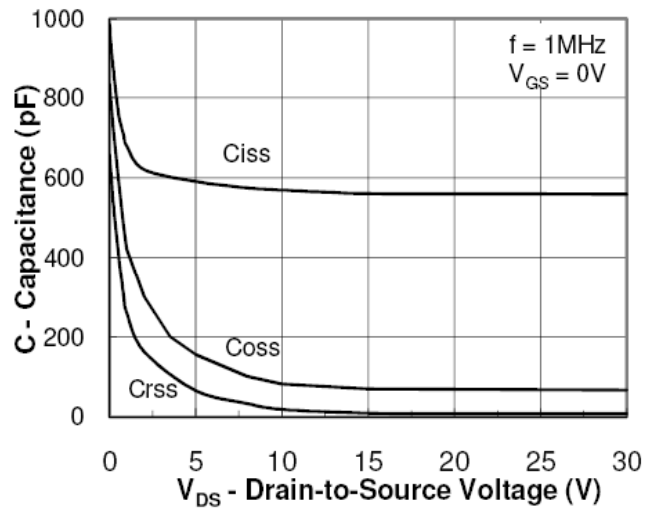
**On Resistance Vs Drain Current**



**On Resistance Vs Gate Source Voltage**



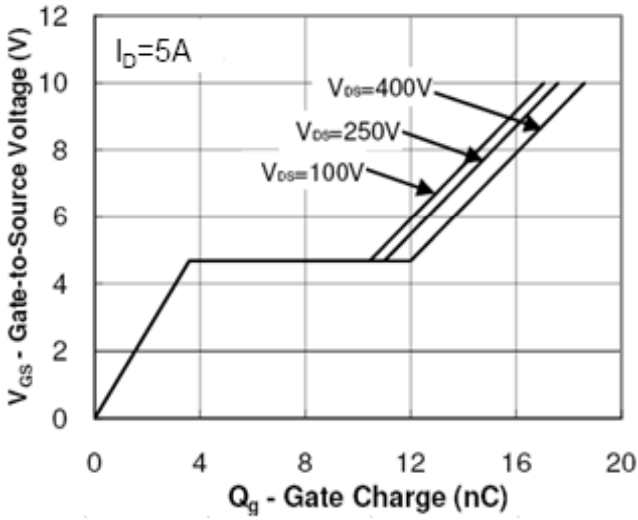
**On Resistance Vs Junction Temperature**



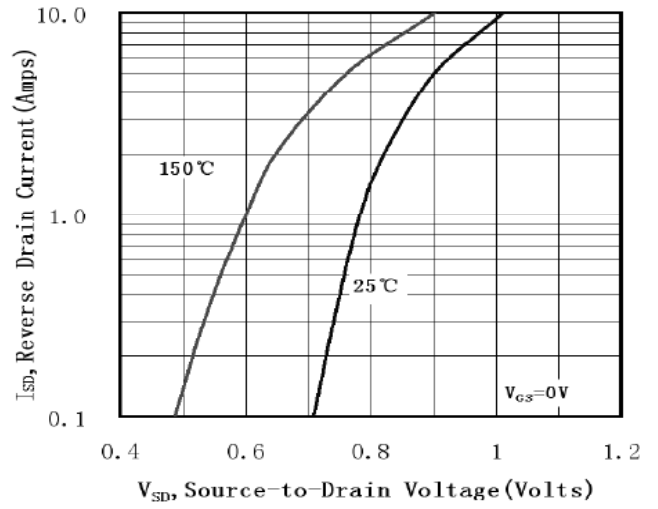
**Capacitance**



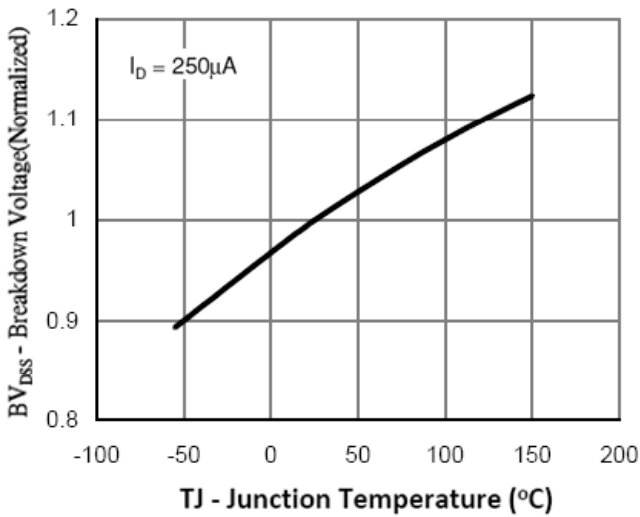
CHARACTERISTICS CURVE



Gate Charge Waveform



Source-Drain Diode Forward Voltage



Normalized Gate Threshold Voltage Vs Temperature

**T0-251 MECHANICAL DATA**
**UNIT: mm**

SYMBOL	MIN	NOM	MAX	SYMBOL	MIN	NOM	MAX
A	2.10		2.50	D1	5.10		5.50
A1	0.95		1.30	E	5.80		6.30
B	0.80		1.25	e	2.25	2.30	2.35
b	0.50		0.80	L	7.70		8.50
b1	0.70		0.90	L1	1.45		1.95
C	0.45		0.60	R		0.30	
C1	0.45		0.60				
D	6.35		6.75				

