

**DESCRIPTION**

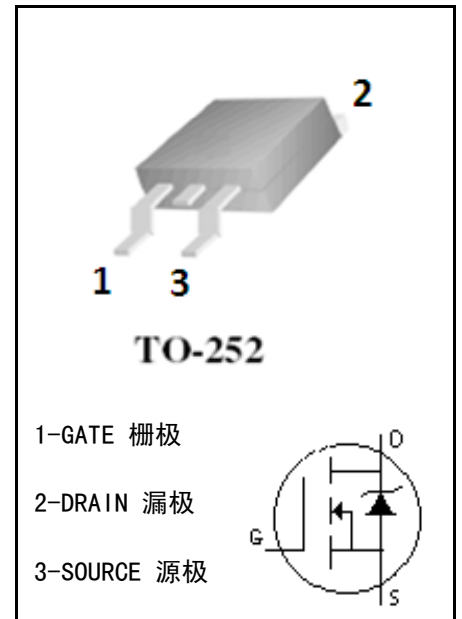
- ELECTRONIC BALLAST
- ELECTRONIC TRANSFORMER
- SWITCH MODE POWER SUPPLY

**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	V <sub>DS</sub>	650	V
gate-source Voltage	V <sub>GS</sub>	±30	V
Continuous Drain Current (T <sub>C</sub> =25°C)	I <sub>D</sub>	4	A
Drain Current-Pulsed	I <sub>DM</sub>	16	A
Total Dissipation	PD	50	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55-150	°C
Single Pulse Avalanche Energy	E <sub>AS</sub>	130	mJ

**MECHANICAL**

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

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Drain-source Breakdown Voltage	B <sub>V</sub> D <sub>SS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250 μA	650		V
Gate Threshold Voltage	V <sub>GS</sub> (TH)	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250 μA	2	4	V
Drain-source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =650V, V <sub>GS</sub> =0V		25	μA
Drain-Source Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =4A		1.4	V
Gate-body Leakage Current (V <sub>DS</sub> = 0)	I <sub>GSS</sub>	V <sub>GS</sub> =±30V		±100	nA
Forward Transconductance	g <sub>fs</sub>	V <sub>ds</sub> =10V I <sub>d</sub> =2.0A	0.5		S
Static Drain-source On Resistance	R <sub>DS</sub> (ON)	V <sub>GS</sub> =10V, I <sub>D</sub> =2.0A		2.8	Ω
Thermal Resistance Junction-case	R <sub>thJ-c</sub>			2.5	°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	-	610	-	pF
output Capacitance	C <sub>oss</sub>		-	62	85	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		-	7	10	pF

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

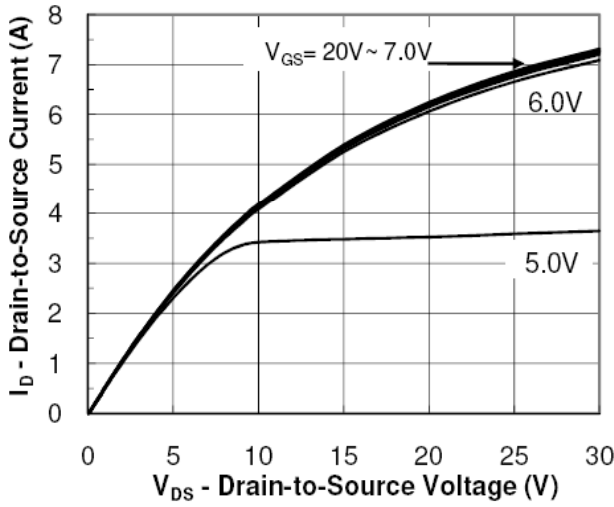
CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =300V, I <sub>D</sub> =4.0A, R <sub>G</sub> =25Ω	-	20	40	ns
Turn-On Rise Time	t <sub>r</sub>		-	30	70	ns
Turn-Off Delay Time	t <sub>d(off)</sub>		-	25	100	ns
Turn-Off Rise Time	t <sub>f</sub>		-	35	85	ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =520V, I <sub>D</sub> =4.0A, V <sub>GS</sub> =10V	-	13.7	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	2.9	-	nC
Gate-Drain Charge	Q <sub>gd</sub>		-	4.6	-	nC

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

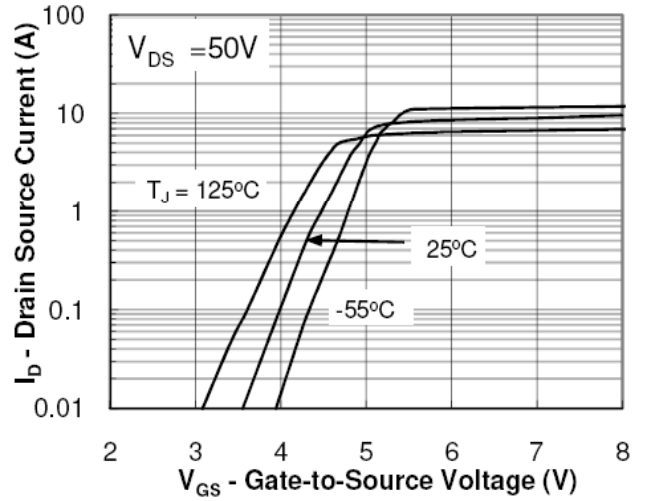
CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Max. Diode Forward Current	I <sub>S</sub>		-	-	4	A
Max. Pulsed Forward Current	I <sub>SM</sub>		-	-	16	A
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =4.0A	-	-	1.4	V
Reverse Recovery Time	t <sub>rr</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =4.0A, dI <sub>F</sub> /dt=100A/μs	-	390	-	ns
Reverse Recovery Charge	Q <sub>rr</sub>		-	1.5	-	μC



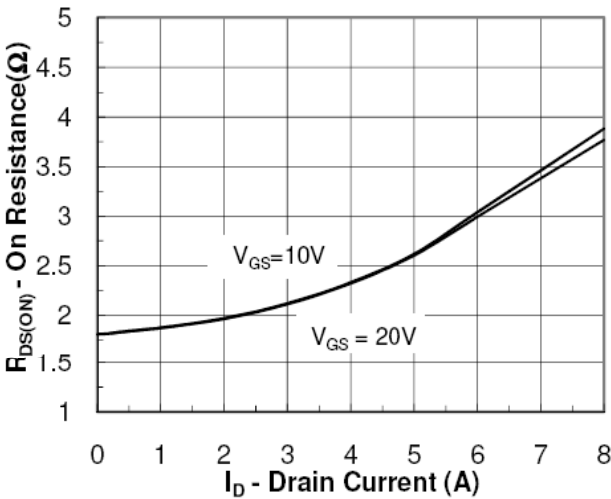
CHARACTERISTICS CURVE



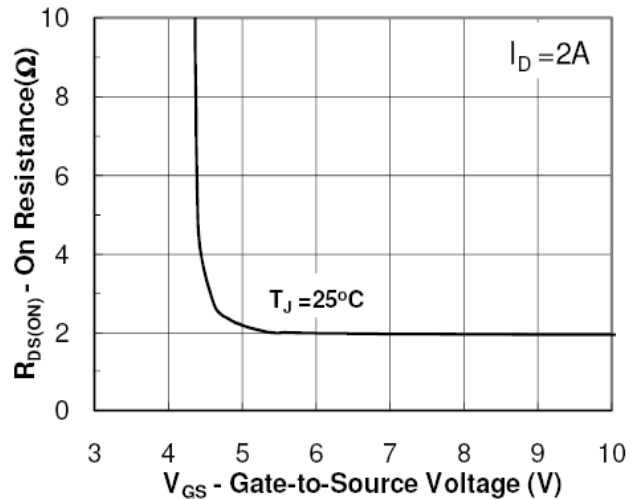
Output Characteristic



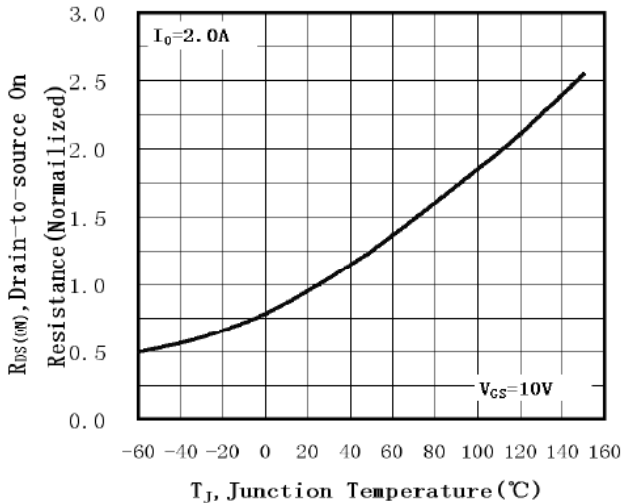
Transfer Characteristic



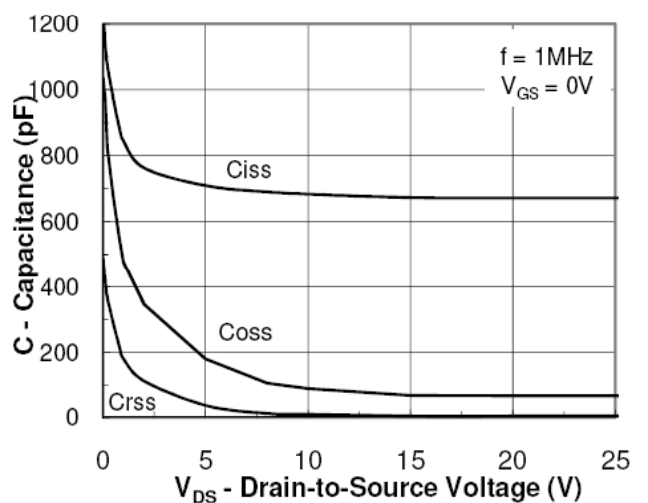
On Resistance Vs Drain Current



On Resistance Vs Gate Source Voltage



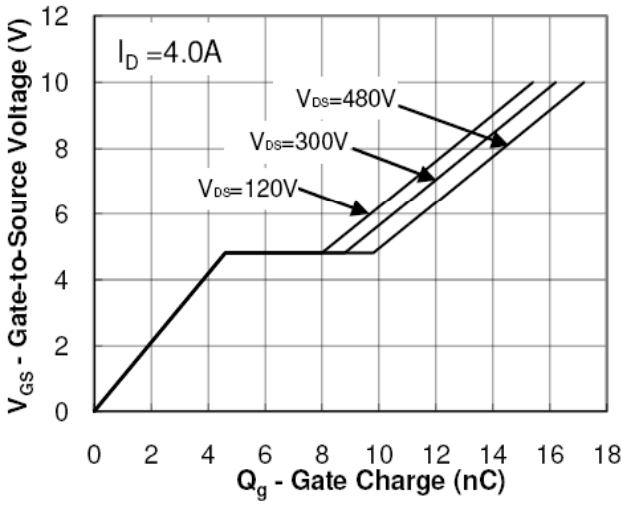
On Resistance Vs Junction Temperature



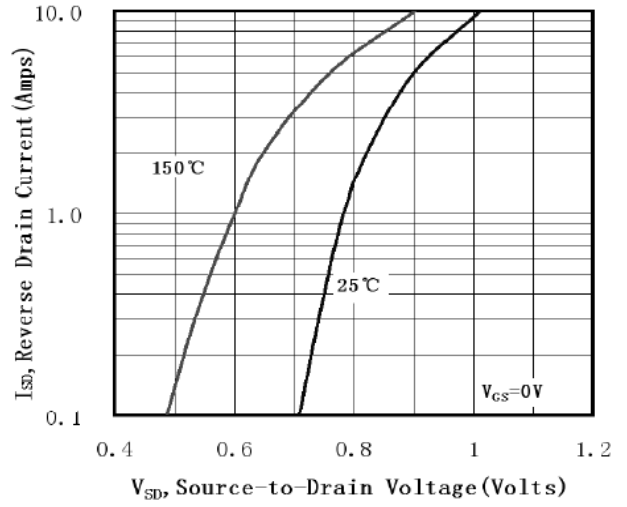
Capacitance



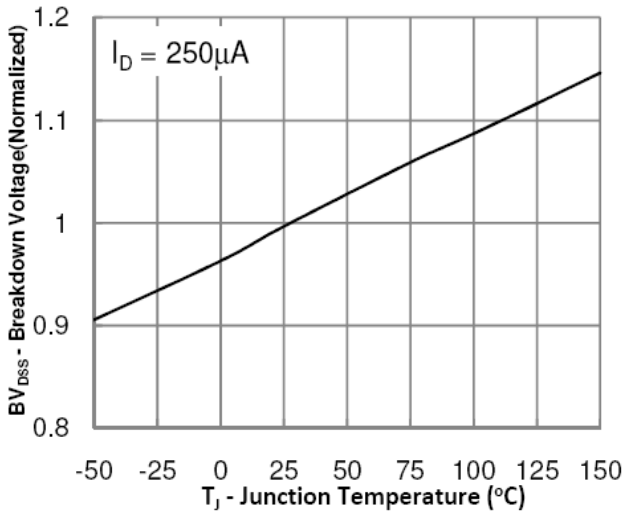
CHARACTERISTICS CURVE



Gate Charge Waveform



Source-Drain Diode Forward Voltage



Breakdown Voltage Vs Junction Temperature

**TO-252 MECHANICAL DATA**

UNIT: mm

SYMBOL	MIN	NOM	MAX	SYMBOL	MIN	NOM	MAX
A	2.10		2.50	E	5.80		6.30
B	0.80		1.25	e1	2.25	2.30	2.35
b	0.50		0.85	e2	4.45		4.75
b1	0.50		0.90	L1	9.50		10.20
b2	0.45		0.60	L2	0.90		1.45
C	0.45		0.60	L3	0.60		1.10
D	6.35		6.75	K	-0.1		0.10
D1	5.10		5.50				

