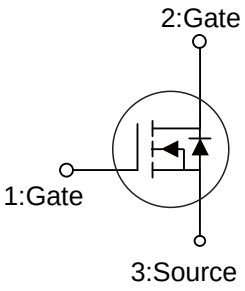
■PRODUCT CHARACTERISTICS

VDSS	60V
R_{DS}(on)typ(@V_{GS}=10 V)	34mΩ
R_{DS}(on)typ(@V_{GS}=4.5 V)	38mΩ
ID	20A

Symbol



■ FEATURES

High density cell design for ultra low Rdson

Fully characterized avalanche voltage and current

Good stability and uniformity with high E_{AS}

■ APPLICATION

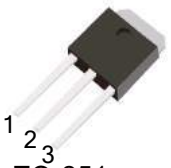
Power switching application

Hard switched and high frequency circuits

Uninterruptible power supply



TO-252



TO-251

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT6530C	TO-251	70 pieces/Tube
N/A	MOT6530D	TO-252	2500 pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS (T_C=25℃ unless otherwise specified)

Parameter		Symbol	Value	Unit
Drain-to-Source Voltage		V_{DS}	60	V
Gate-to-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C = 25°C	I_D	20	A
	T_C = 100°C	I_D	14	A
Pulsed Drain Current		I_{DM}	60	A
Avalanche Energy		E_{AS}	72	mJ
Power Dissipation	T_C = 25°C	P_D	45	W
	T_C = 100°C	P_D	23	W
Thermal Resistance, Junction-to-Case		$R_{\theta JC}$	3.3	°C/W
Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 175	°C

■ ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1	-	2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=10A	-	34	42	mΩ
		V_{GS}=4.5V, I_D=10A	-	38	46	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5V,I_D=5A	5	-	-	S
Dynamic characteristics						
Input Capacitance	C_{lss}	V_{DS}=20V,V_{GS}=0V, F=1.0MHz	-	717	-	PF
Output Capacitance	C_{oss}		-	40	-	PF
Reverse Transfer Capacitance	C_{rss}		-	36	-	PF
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=30V,I_D=10A V_{GS}=10V,R_G=3Ω	-	7	-	nS
Turn-on Rise Time	t_r		-	20	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	16	-	nS
Turn-Off Fall Time	t_f		-	23	-	nS
Total Gate Charge	Q_g	V_{DS}=30V,I_D=10A, V_{GS}=10V	-	25	-	nC
Gate-Source Charge	Q_{gs}		-	4.5	-	nC
Gate-Drain Charge	Q_{gd}		-	6.5	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=20A	-	-	1.2	V
Diode Forward Current	I_S		-	-	20	A
Reverse Recovery Time	t_{rr}	T_J = 25°C, I_F =10A di/dt = 100A/μs	-	29	-	nS
Reverse Recovery Charge	Qrr		-	49	-	nC

■ TY PICAL CHARACTERISTICS

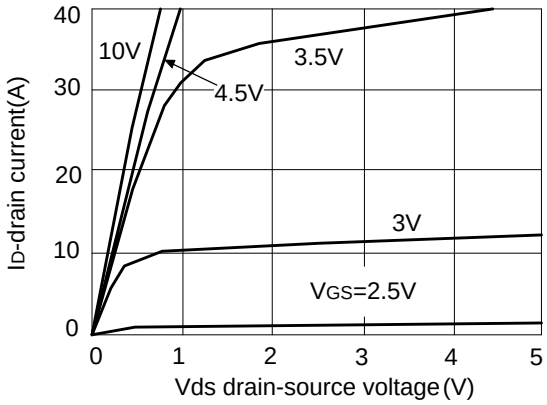


Fig.1 Output characteristics

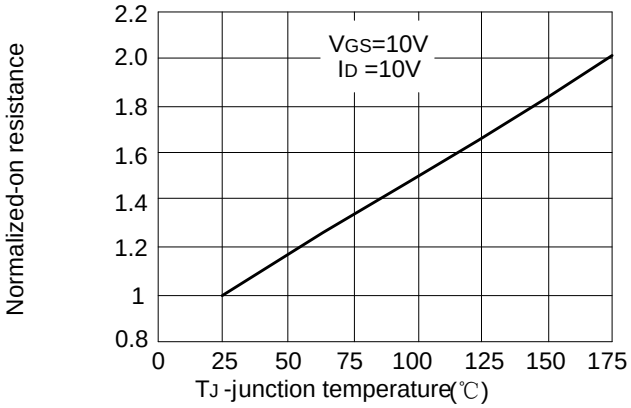


Fig.2 Drain-source on-resistance

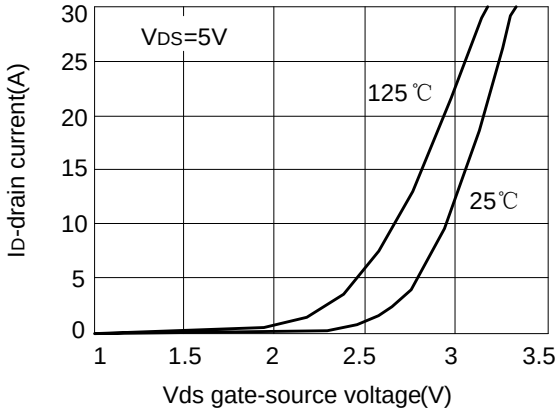


Fig.3 Transfer characteristics

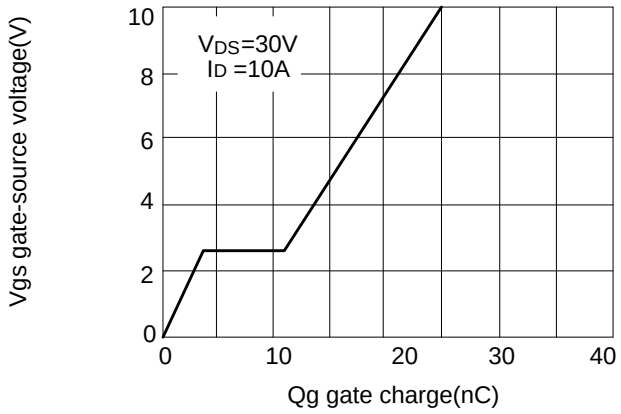


Fig.4 Gate chaerge

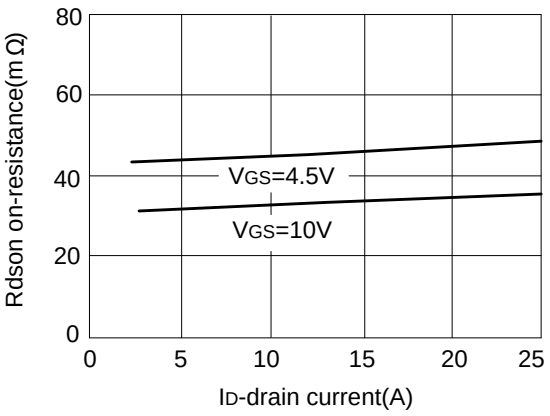


Fig.5 Drain-source on-resistance

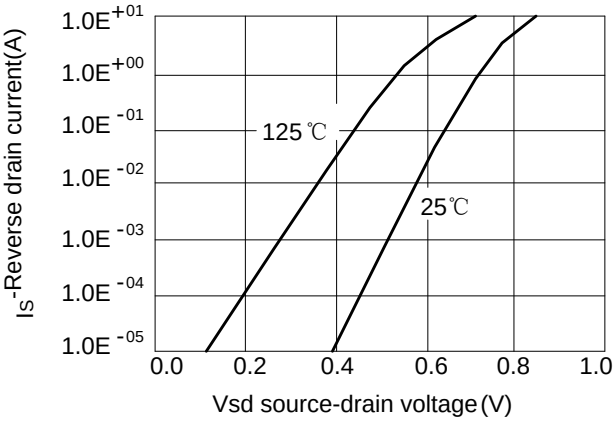


Fig.6 Source-drain diode forward

■ TY PICAL CHARACTERISTICS(Cont.)

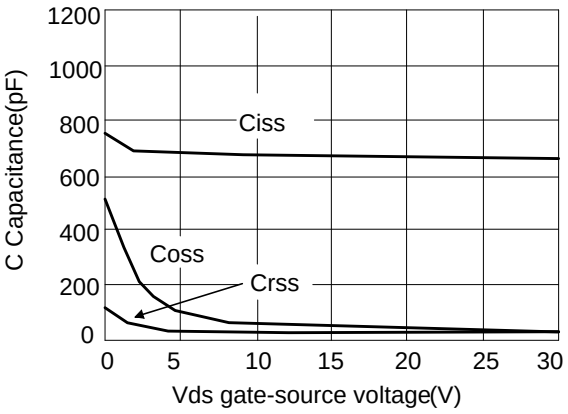


Fig.7 Capacitance vs vds

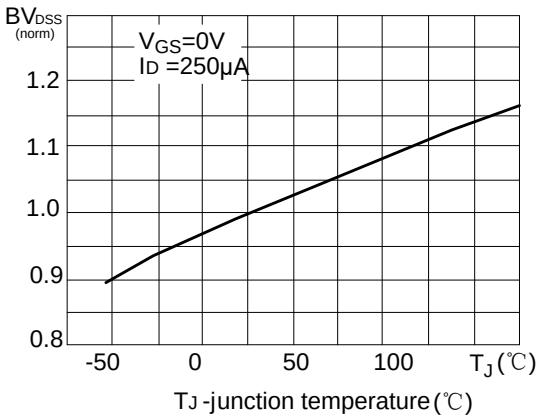


Fig.8 BV_{DSS} vs junction temperature

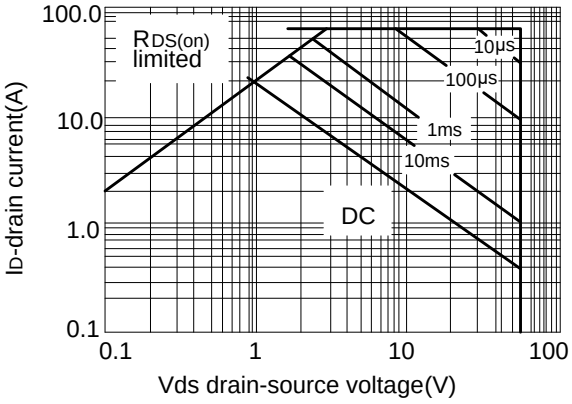


Fig.9 Safe operation area

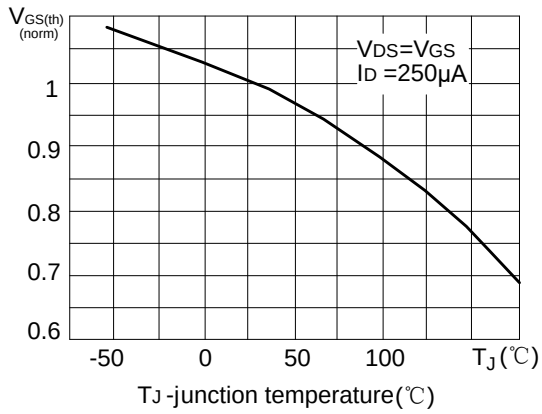


Fig.10 $V_{GS(th)}$ vs junction temperature

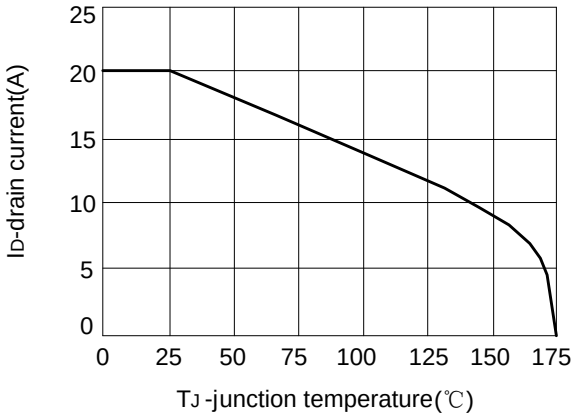
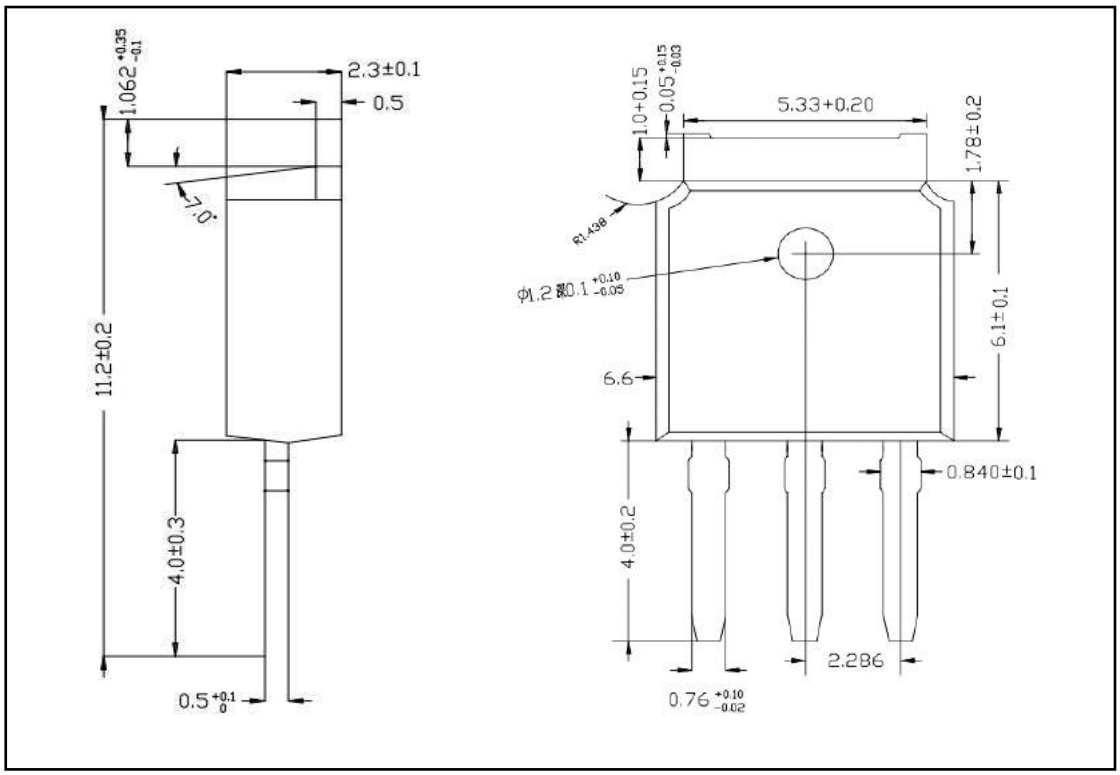


Fig.11 Current de-rating

■ TO-251 PACKAGE OUTLINE DIMENSIONS



■ TO-252 PACKAGE OUTLINE DIMENSIONS

