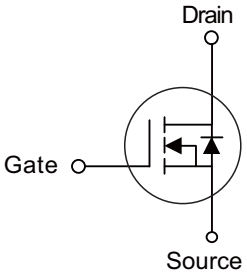
■ PRODUCT CHARACTERISTICS

V_{DSS}	100V
$R_{DS(ON)}$ Typ(@ V_{GS} =10V)	24 mΩ
$R_{DS(ON)}$ Typ(@ V_{GS} =4.5V)	32 mΩ
ID	18.9A

Symbol



■ APPLICATIONS

- Portable Equipment and Battery Powered systems.
- Power Management in Notebook Computer

■ FEATURES

- Lower $R_{DS(ON)}$ to Minimize Conduction Losses
- Reliable and Rugged
- ROHS Compliant & Halogen-Free
- 100% UIS and Rg Tested

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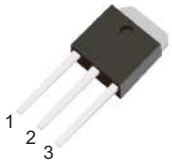

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■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT1532C	TO-251	70 pieces/Tube
N/A	MOT1532D	TO-252	2500 pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS (T_J=25°C Unless Otherwise Noted)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	100	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	T_C=25°C	I_D	18.9	A
	T_C=100°C	I_D	12	A
Plused Drain Current		I_{DM}	76	A
Avalanche Energy		E_{AS}	120	mJ
Power Dissipation		P_D	24	W
Junction Temperature		T_J	+150	°C
Storage Temperature Range		T_{STG}	-55 ~ +150	°C

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static parameters						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 250μA, V_{GS} = 0V	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =100V, V_{GS} = 0V	-	-	1.0	μA
		T_J = 55°C	-	-	5.0	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1	-	3	V
Static Drain-Source ON-Resistance	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 10A	-	24	32	mΩ
		V_{GS} = 4.5V, I_D = 6A	-	32	42	mΩ
Forward Transconductance	g_{FS}	V_{DS} = 5V, I_D = 10A	-	-	-	S
Diode Forward Voltage	V_{SD}	I_S = 1A, V_{GS} = 0V	-	0.7	1	V
Diode Continuous Current	I_S	T_C = 25°C	-	-	24	A
Dynamic parameters						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 20V, f = 1MHz	-	850	-	pF
Output Capacitance	C_{oss}		-	400	-	pF
Reverse Transfer Capacitance	C_{rss}		-	20	-	pF
Gate Resistance	R_g	V_{GS} = 0V, V_{DS}= 0V, f = 1MHz	-	2.6	-	Ω
Switching parameters						
Total Gate Charge (@ V_{GS} = 10V)	Q_g	V_{GS} = 0 to 10V V_{DS} = 50V, I_D = 10A	-	6.8	-	nC
Total Gate Charge (@ V_{GS} = 4.5V)	Q_g		-	3.7	-	nC
Gate Source Charge	Q_{gs}		-	1.0	-	nC
Gate Drain Charge	Q_{gd}		-	1.8	-	nC
Turn-On DelayTime	$t_{D(on)}$	V_{GS} = 10V, V_{DS} = 50V R_L = 5.0Ω, R_{GEN} = 6Ω	-	4.9	-	ns
Turn-On Rise Time	t_r		-	16.6	-	ns
Turn-Off DelayTime	$t_{D(off)}$		-	11.2	-	ns
Turn-Off Fall Time	t_f		-	4.9	-	ns
Body Diode Reverse Recovery Time	t_{rr}	I_F = 10A, dI_F/dt = 100A/μs	-	33	-	ns
Body Diode Reverse Recovery Charge	Q_{rr}	I_F = 10A, dI_F/dt = 100A/μs	-	45	-	nC

■ TYPICAL CHARACTERISTICS

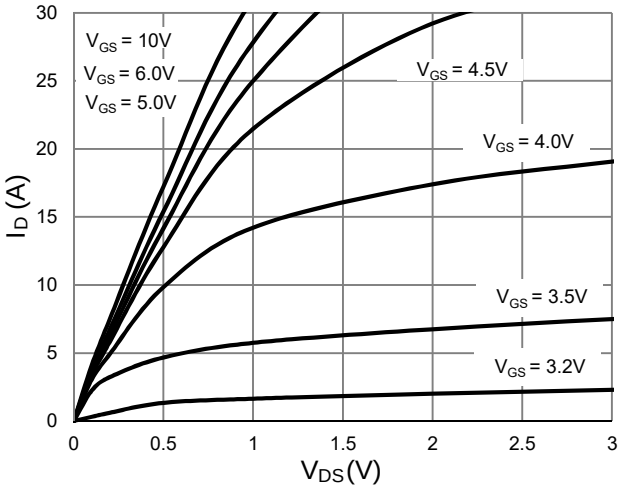


Figure 1: Saturation characteristics

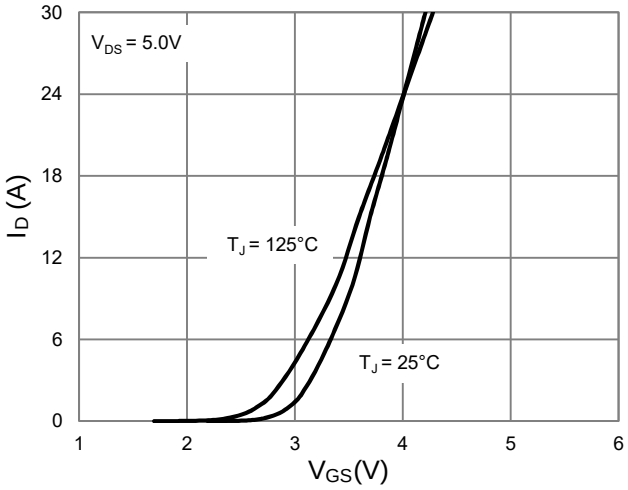


Figure 2: Transfer characteristics

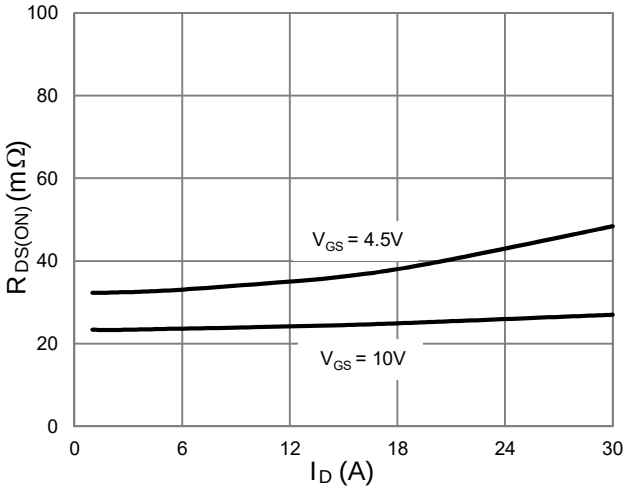


Figure 3: Rds(on) vs. drain current

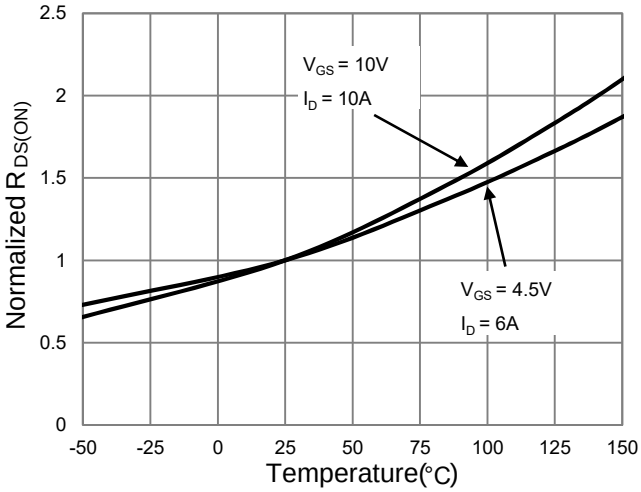


Figure 4: Rds(on) vs. junction temperature

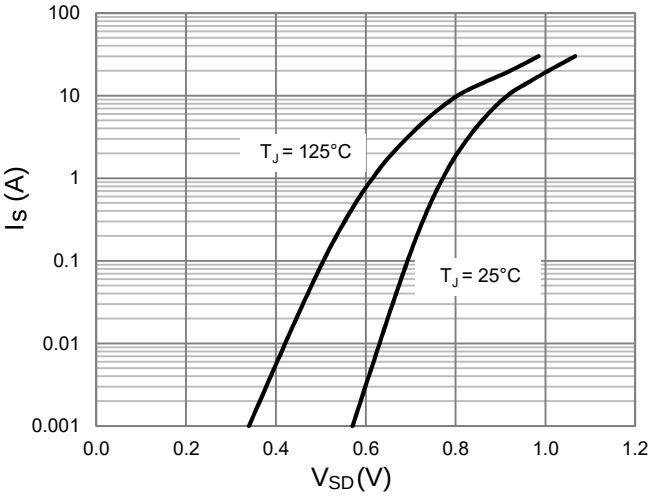


Figure 5: Body-diode characteristics

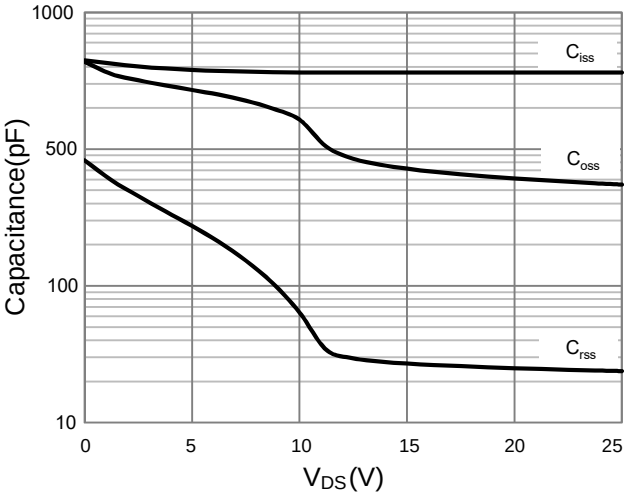


Figure 6: Capacitance characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

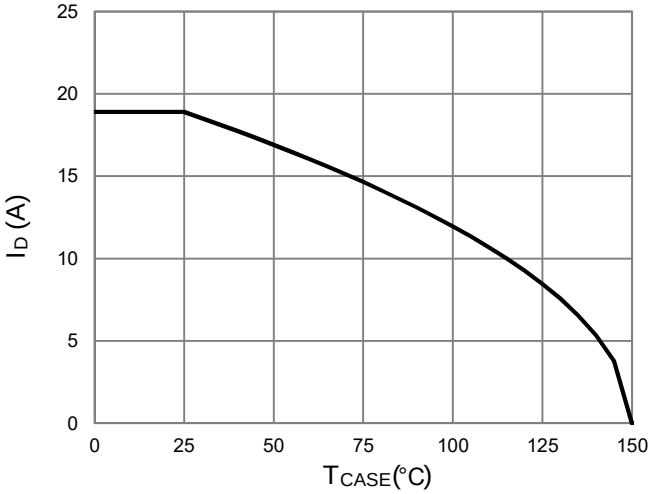


Figure 7: Current dr-rating

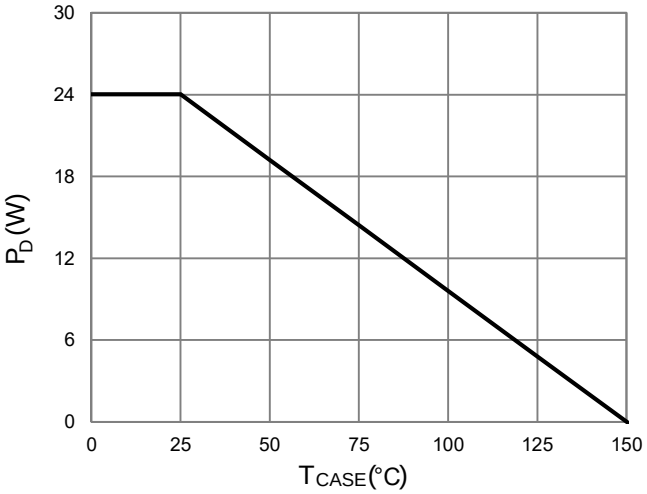


Figure 8: Power de-rating

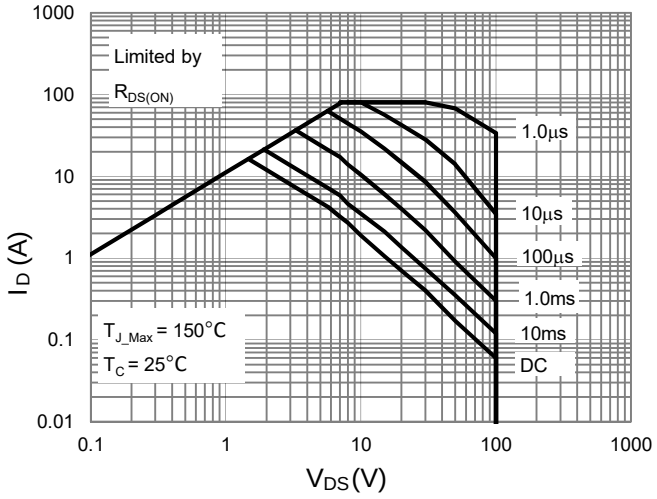
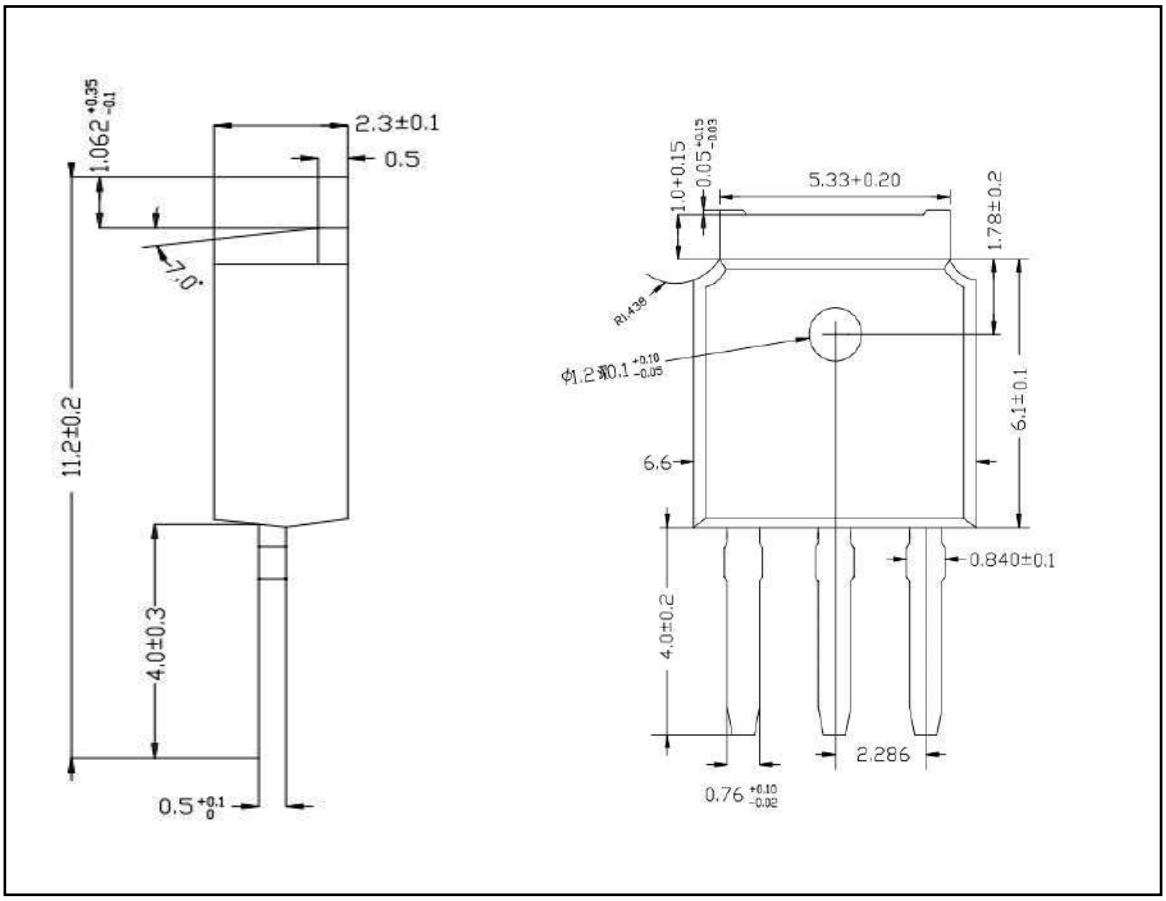


Figure 9: Maximum safe operating area

■ TO-252 PACKAGE OUTLINE DIMENSIONS



■ TO-252 PACKAGE OUTLINE DIMENSIONS