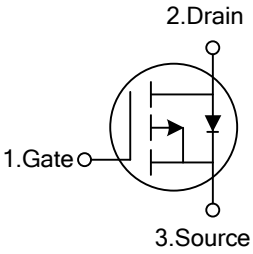
■ PRODUCT CHARACTERISTICS

VDSS	-30V
R_{DS}(on)Typ(@V_{GS}=-10 V)	8.5mΩ
ID	-50A

Symbol



■ APPLICATIONS

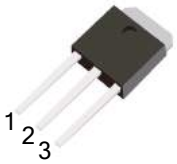
* Electronic Ballast
* Electronic Transformer
* Switch Mode Power Supply

■ FEATURES

* $R_{DS(ON)}$ ≤8.5mΩ@ V_{GS}=-10V
* High Switching Speed



TO-252



TO-251

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT50P03D	TO-252	2500 pieces /Reel
N/A	MOT50P03C	TO-251	70 pieces/Tube

■ ABSOLUTE MAXIMUM RATINGS (T_C = 25°C, unless otherwise specified)

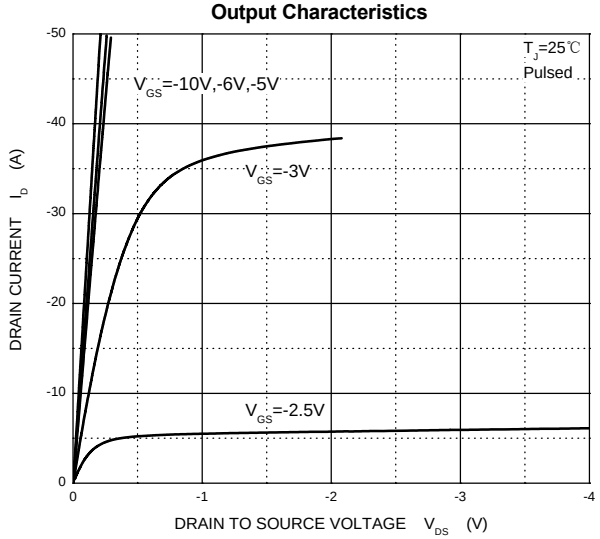
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-50	A
Pulsed Drain Current	I_{DM}	-200	A
Single Pulsed Avalanche Energy	E_{AS}	300	mJ
Maximum Power Dissipation	P_D	65	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	℃/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	1.92	℃/W
Operating Junction and Storage Temperature Range	T_J ,T_{stg}	-55~+150	℃

■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise noted)

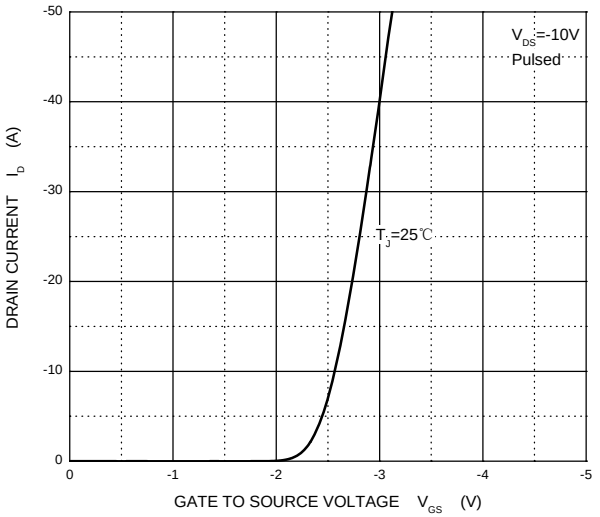
Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =-250μA	-30	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-24V, V_{GS} =0V	-	-	-1	μA
		T_J =125℃	-	-	-200	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V	-	-	±100	nA
On characteristics						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1.0	-	-2.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-10A	-	8.5	10	mΩ
Forward transconductance	g_{FS}	V_{DS} =-10V, I_D =-15A	10	-	-	S
Dynamic characteristics						
Input capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V, f =1MHz	-	3590	-	pF
Output capacitance	C_{oss}		-	695	-	pF
Reverse transfer capacitance	C_{rss}		-	665	-	pF
Switching characteristics						
Total gate charge	Q_g	V_{GS}=-10V, V_{DS}=-15V, I_D=-10A	-	84	-	nC
Gate-source charge	Q_{gs}		-	11.7	-	nC
Gate-drain charge	Q_{gd}		-	25	-	nC
Turn-on delay time	$t_{d(on)}$	V_{DD}=-15V,I_D=-10A, V_{GS}=-10V,R_G=6Ω	-	13	-	ns
Turn-on rise time	t_r		-	12	-	ns
Turn-off delay time	$t_{d(off)}$		-	50	-	ns
Turn-off fall time	t_f		-	14	-	ns
Drain-source diode characteristics						
Drain-source diode forward voltage	V_{SD}	V_{GS} =0V, I_S=-10A	-	-	-1.2	V
Drain-source diode forward current	I_S		-	-	-50	A
Pulsed drain-source diode forward current	I_{SM}		-	-	-200	A

■ TEST CIRCUITS AND WAVEFORMS

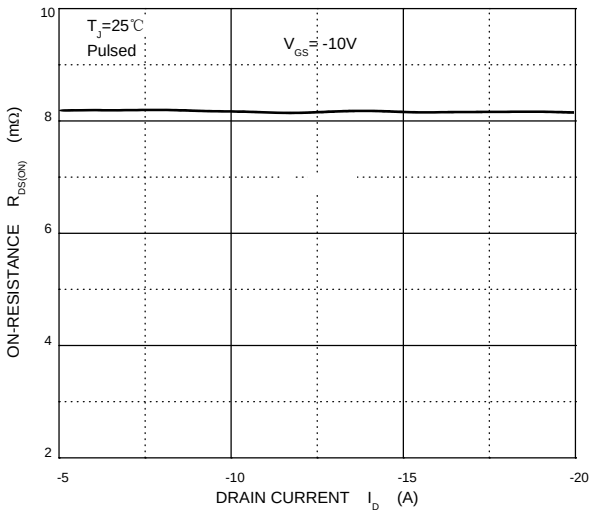
Output Characteristics



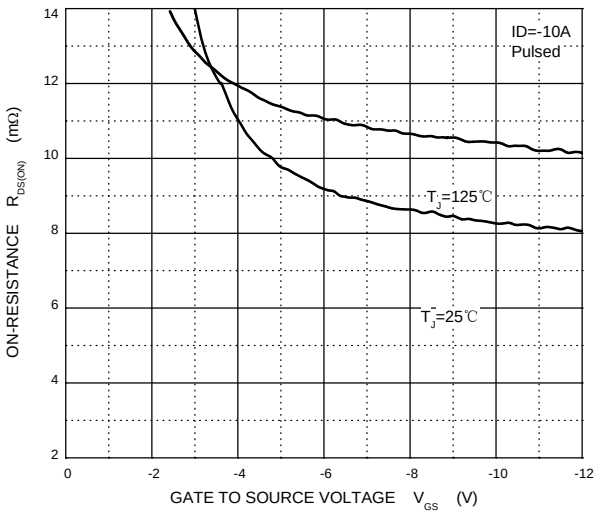
Transfer Characteristics



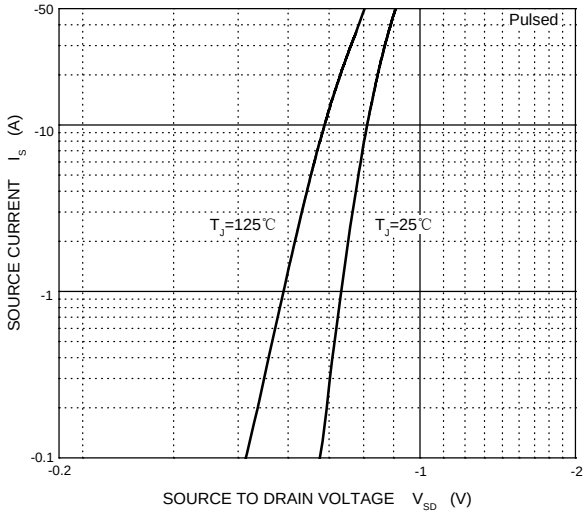
$R_{DS(ON)}$ —— I_D



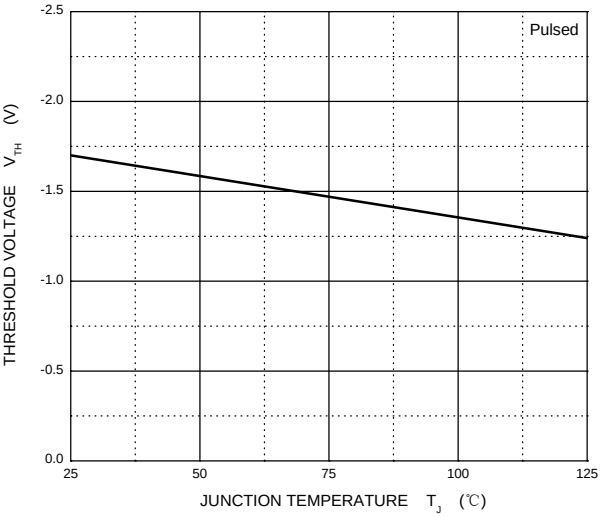
$R_{DS(ON)}$—— V_{GS}



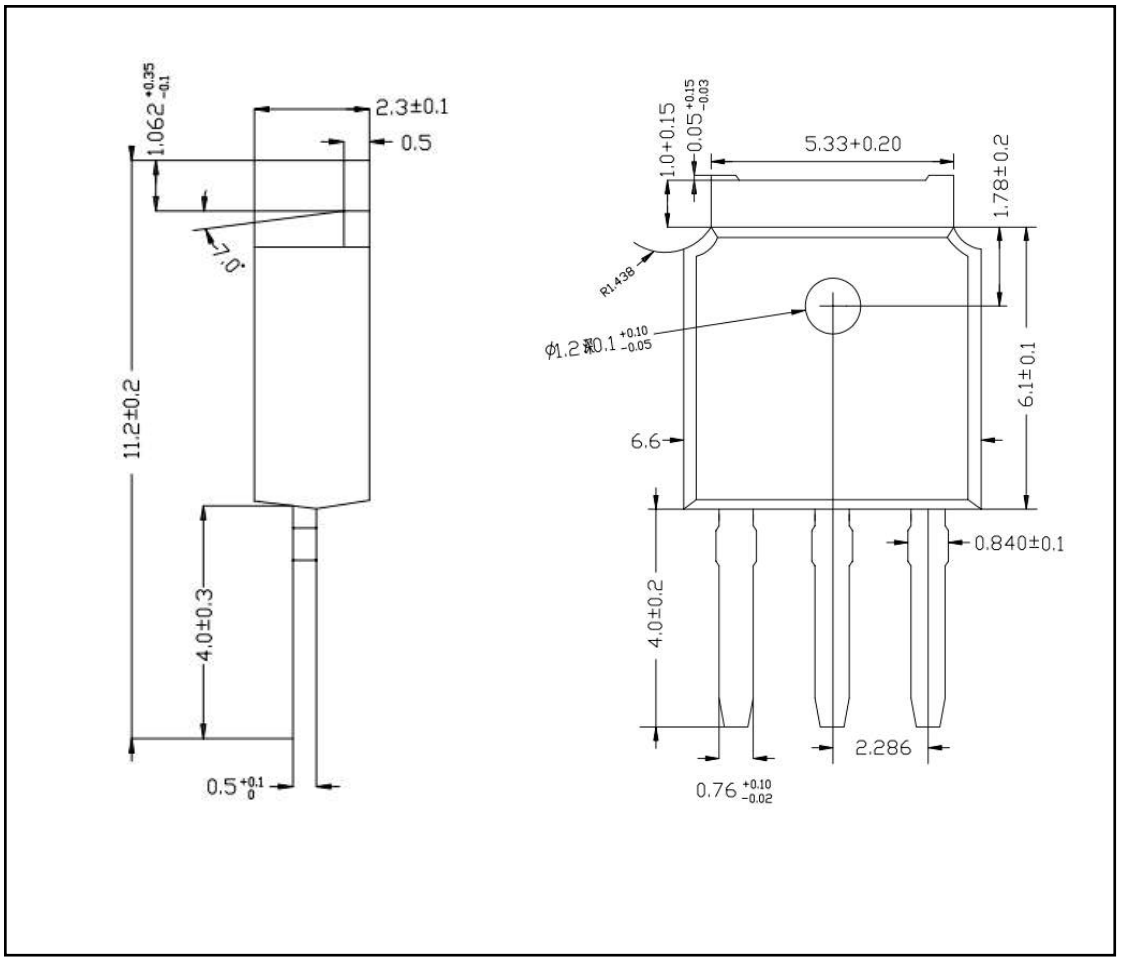
I_S —— V_{SD}



Threshold Voltage



■ TO-251-3L PACKAGE OUTLINE DIMENSIONS



■ TO-252-2L PACKAGE OUTLINE DIMENSIONS

