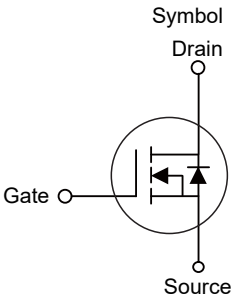
■ PRODUCT CHARACTERISTICS

VDSS	30V
R_{DS}(on)typ(@V_{GS}=10 V)	3.6mΩ
R_{DS} (on)typ(@V_{GS} =4.5 V)	5.3mΩ
ID	85A

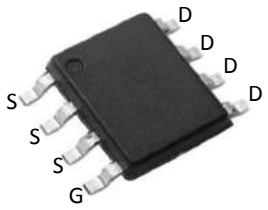


■ APPLICATIONS

- 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



SOP8

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT3145S	SOP-8L	4000Pieces/Reel

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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current (V_{GS}=10V)	I_D	85	A
Power Dissipation	P_D	31	W
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	60	°C/W
Junction to Case	θ_{JC}	4	°C/W

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

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Static electrical characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_{DS}=250uA	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=24V, V_{GS}=0V	-	-	1	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_{DS}=250uA	1.1	1.6	2.1	V
Gate Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Drain-Source On-state Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_{DS}=20A	-	3.6	4.5	mΩ
		V_{GS}=4.5V, I_{DS}=18A	-	5.3	7.2	mΩ
Forward Transconductance	gfs	V_{DS}=5V, I_{DS}=20A	-	22	-	S
Dynamic characteristics						
Gate Resistance	R_G	V_{GS}=0V,V_{DS}=0V,F=1MHz	-	2.2	-	Ω
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=15V, Freq.=1MHz	-	1859	-	pF
Output Capacitance	C_{oss}		-	260	-	pF
Reverse Transfer Capacitance	C_{rss}		-	212	-	pF
Turn-on Delay Time	$td_{(ON)}$	V_{GS}=10V,V_{DS}=15V, I_D=1A,R_{GEN}=6Ω	-	9.6	-	nS
Turn-on Rise Time	t_r		-	23.4	-	nS
Turn-off Delay Time	$td_{(OFF)}$		-	62.8	-	nS
Turn-off Fall Time	t_f		-	23	-	nS
Total Gate Charge	Q_g	V_{GS}=10V,V_{DS}=25V, I_D=14A	-	48	-	nC
Gate-Source Charge	Q_{gs}		-	3.4	-	nC
Gate-Drain Charge	Q_{gd}		-	14	-	nC
Source-drain characteristics						
Diode Forward Voltage	V_{SD}	I_{SD}=1A, V_{GS}=0V	-	0.75	1.1	V
Reverse Recovery Time	t_{rr}	I_F=2A, V_R=0V dI$_F$/dt=100A/μs	-	18.2	-	nS
Reverse Recovery Charge	Q_{rr}		-	9.2	-	nC

TYPICAL CHARACTERISTICS

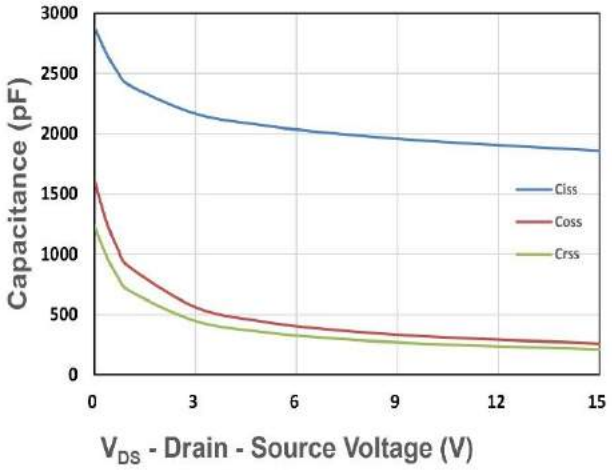


Figure 1. Capacitance

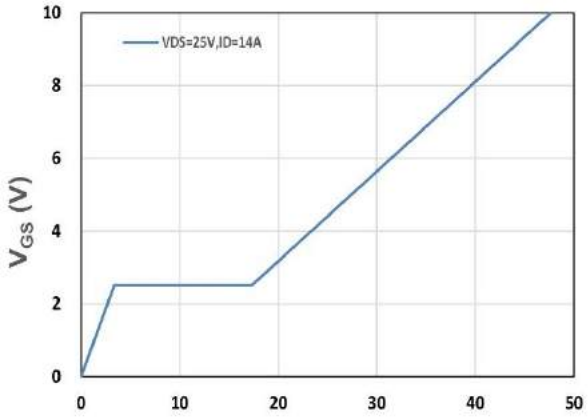


Figure 2. Gate Charge Characteristics

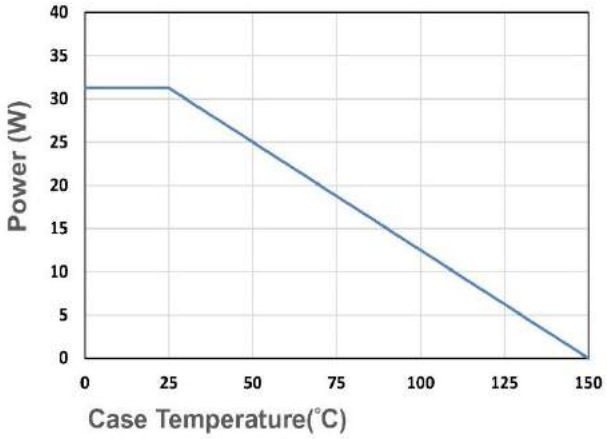


Figure 3. Power Dissipation

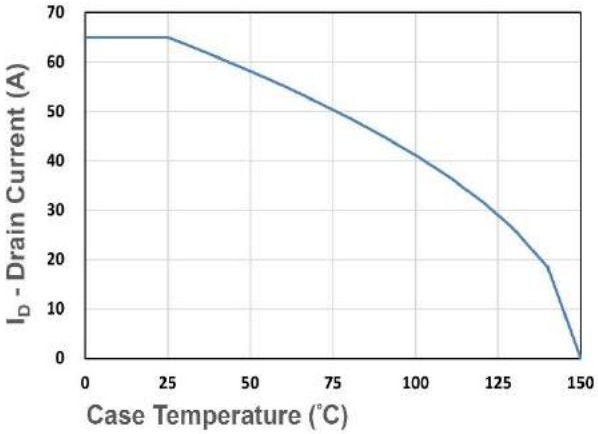


Figure 4. Drain Current

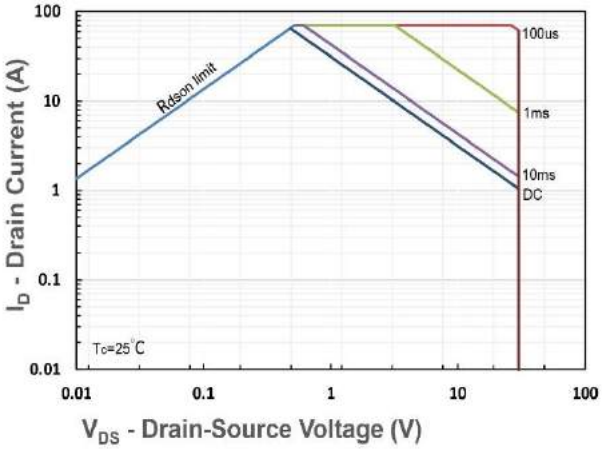


Figure 5. Safe Operating Area

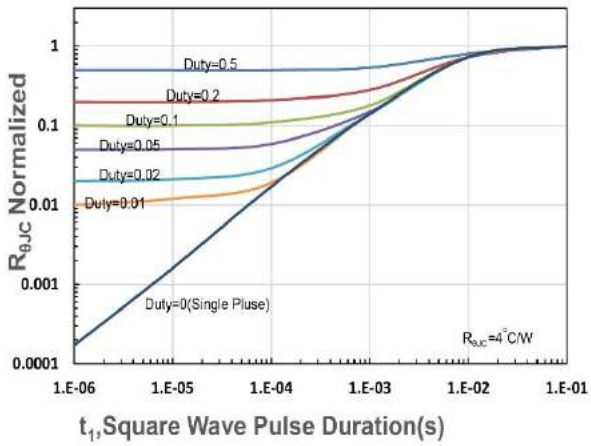


Figure 6. RθJC Transient Thermal Impedance