

ELECTRICAL CHARACTERISTICS at Ta = 25°C

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_{(BR)DSS}$	Drain to Source Breakdown Voltage	$I_D = 1 \text{ mA}$, $V_{GS} = 0 \text{ V}$	20			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 20 \text{ V}$, $V_{GS} = 0 \text{ V}$			1	μA
I_{GSS}	Gate to Source Leakage Current	$V_{GS} = \pm 8 \text{ V}$, $V_{DS} = 0 \text{ V}$			± 10	μA
$V_{GS(off)}$	Cutoff Voltage	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$	0.5		1.3	V
$ y_{fs} $	Forward Transfer Admittance	$V_{DS} = 10 \text{ V}$, $I_D = 3 \text{ A}$	3	5		S
$R_{DS(on)1}$	Static Drain to Source On-State Resistance	$I_D = 3 \text{ A}$, $V_{GS} = 4.5 \text{ V}$	13	19	25	$\text{m}\Omega$
$R_{DS(on)2}$		$I_D = 3 \text{ A}$, $V_{GS} = 4 \text{ V}$	14	20	26	$\text{m}\Omega$
$R_{DS(on)3}$		$I_D = 1.5 \text{ A}$, $V_{GS} = 2.5 \text{ V}$	16	28	39	$\text{m}\Omega$
C_{iss}	Input Capacitance	$V_{DS} = 10 \text{ V}$, $f = 1 \text{ MHz}$		580		pF
C_{oss}	Output Capacitance			95		pF
C_{rss}	Reverse Transfer Capacitance			75		pF
$t_d(on)$	Turn-ON Delay Time	See specified Test Circuit.		310		ns
t_r	Rise Time			1020		ns
$t_d(off)$	Turn-OFF Delay Time			3000		ns
t_f	Fall Time			2250		ns
Q_g	Total Gate Charge	$V_{DS} = 10 \text{ V}$, $V_{GS} = 4.5 \text{ V}$, $I_D = 6 \text{ A}$		6.3		nC
Q_{gs}	Gate to Source Charge			0.83		nC
Q_{gd}	Gate to Drain "Miller" Charge			1.9		nC
V_{SD}	Diode Forward Voltage	$I_S = 6 \text{ A}$, $V_{GS} = 0 \text{ V}$		0.78		V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

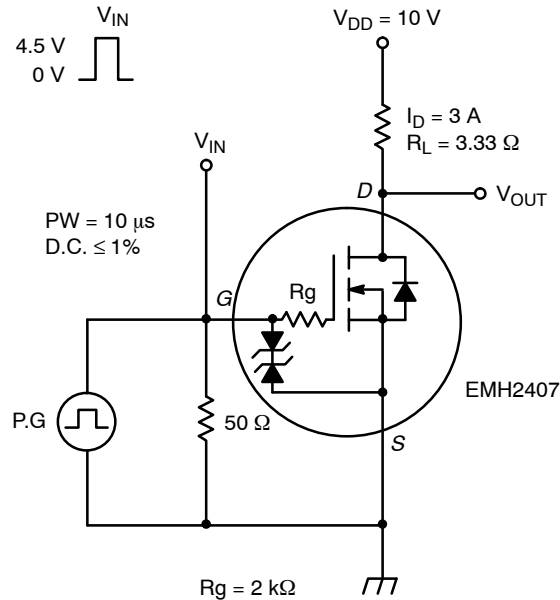


Figure 1. Switching Time Test Circuit

TYPICAL CHARACTERISTICS

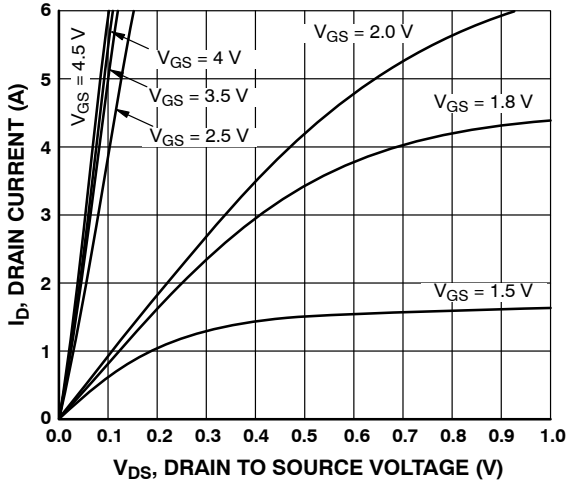


Figure 2. $I_D - V_{DS}$

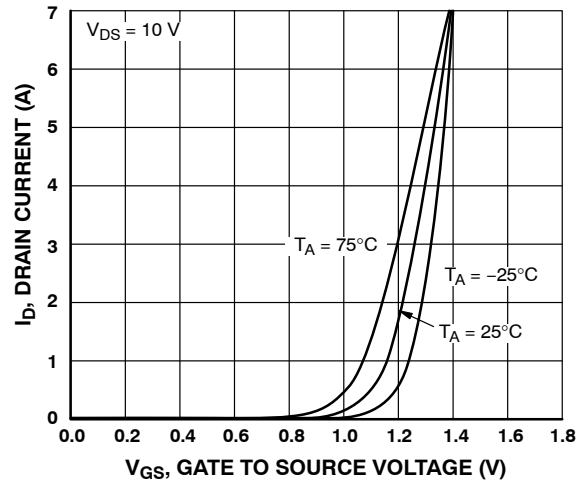


Figure 3. $I_D - V_{GS}$

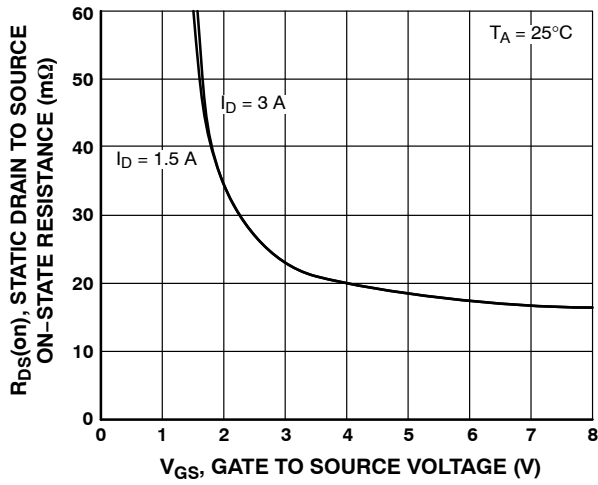


Figure 4. $R_{DS(on)} - V_{GS}$

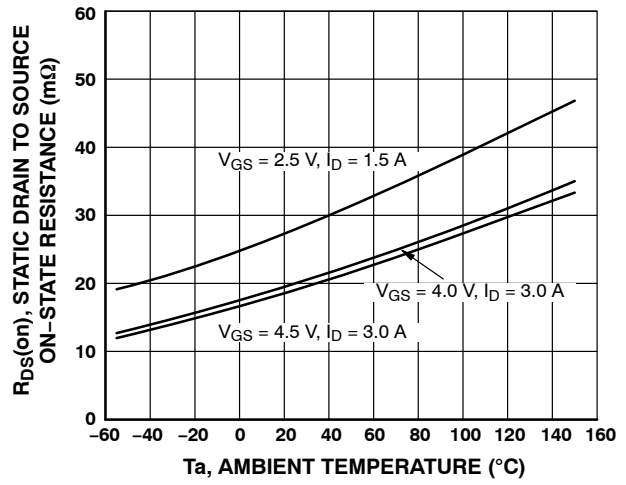


Figure 5. $R_{DS(on)} - T_A$

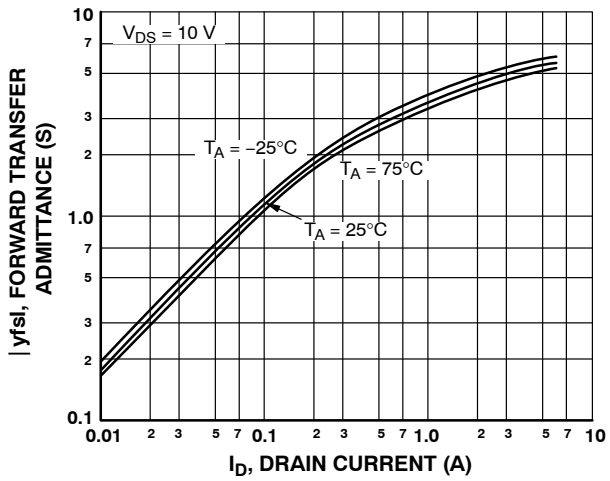


Figure 6. $|y_{fs}| - I_D$

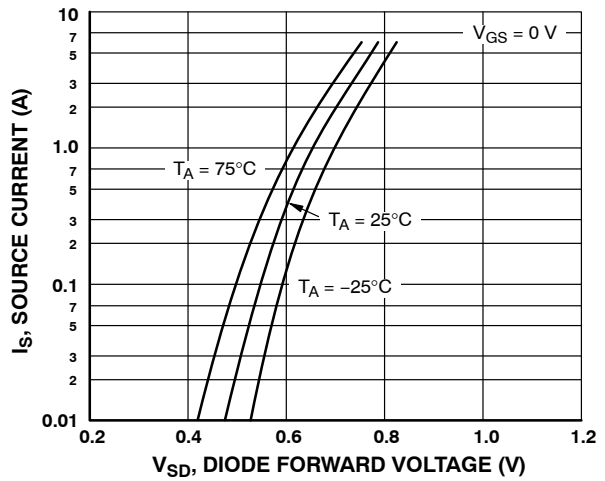


Figure 7. $I_S - V_{SD}$

TYPICAL CHARACTERISTICS (continued)

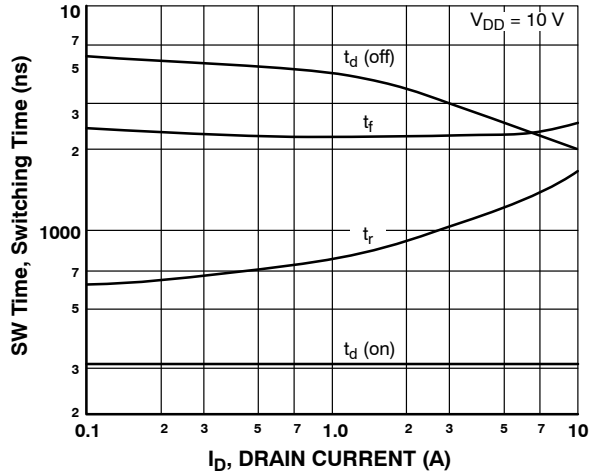


Figure 8. SW Time – I_D

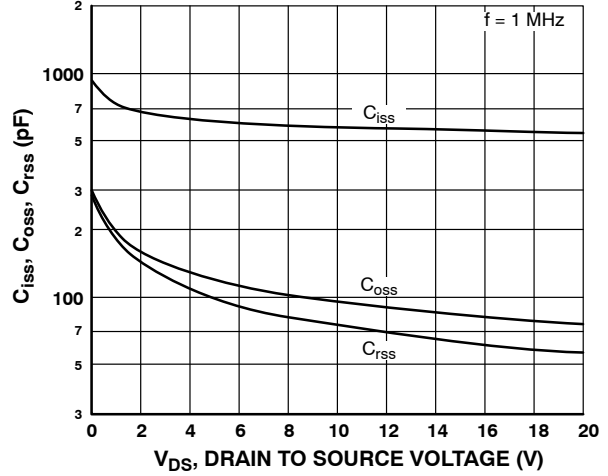


Figure 9. C_{iss} , C_{oss} , C_{rss} – V_{DS}

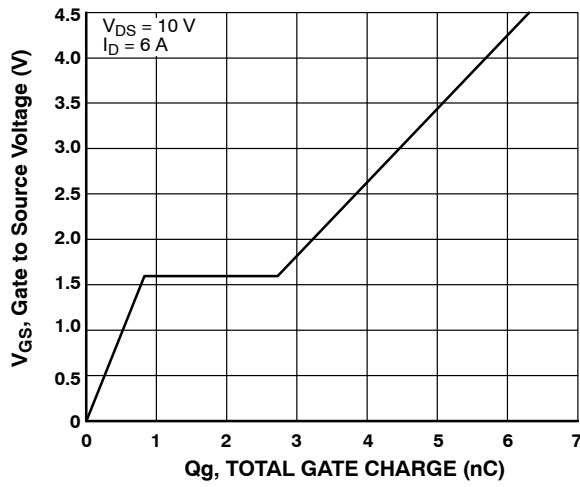


Figure 10. V_{GS} – Q_g

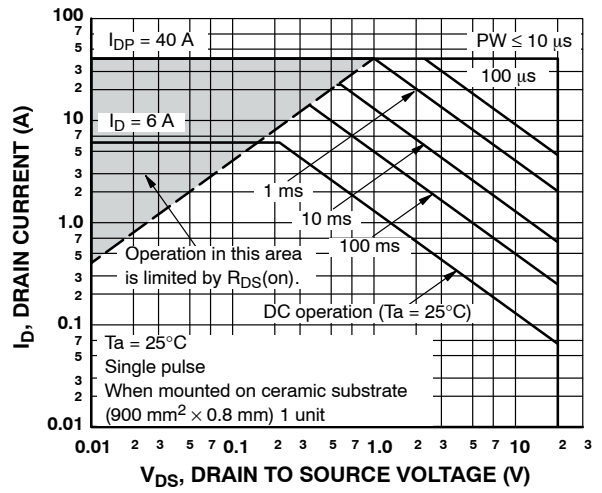


Figure 11. ASO

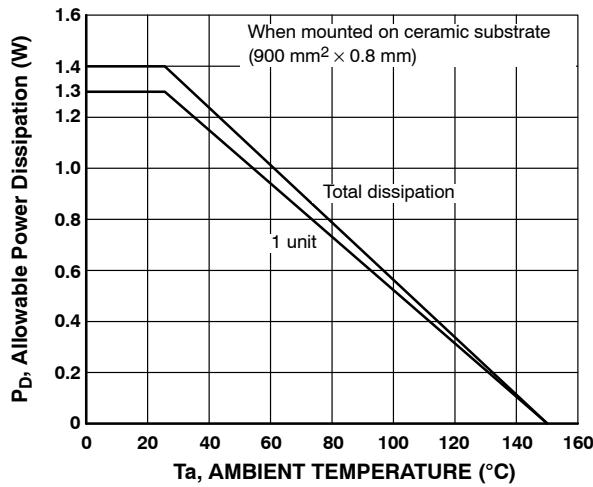
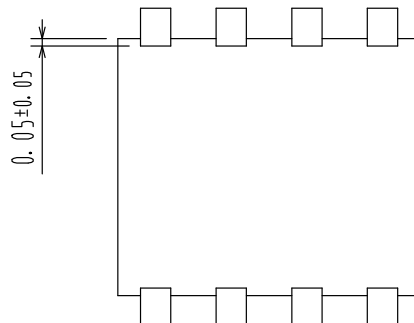
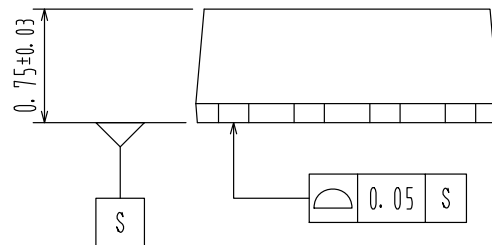
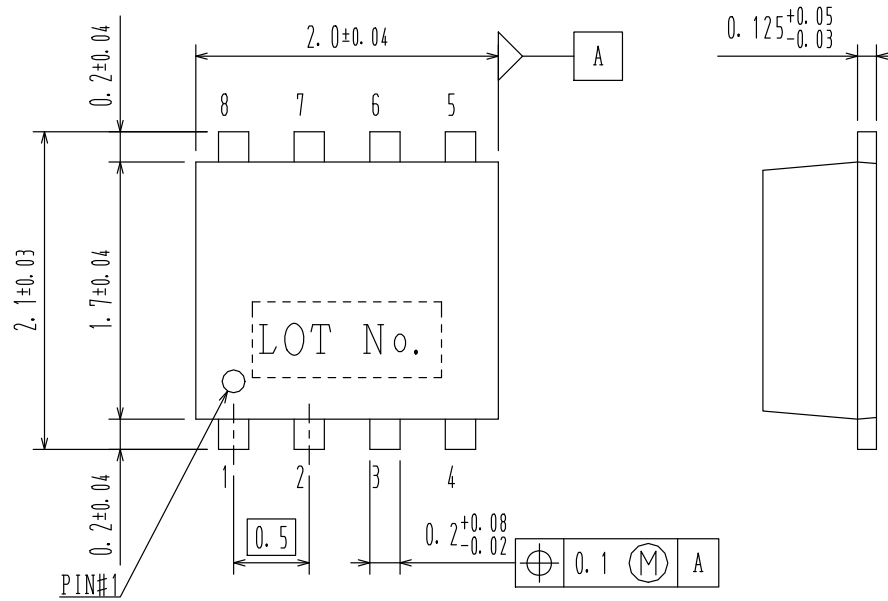


Figure 12. P_D – T_a

EMH2407

PACKAGE DIMENSIONS

SOT-383FL / EMH8
CASE 419AT
ISSUE O



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