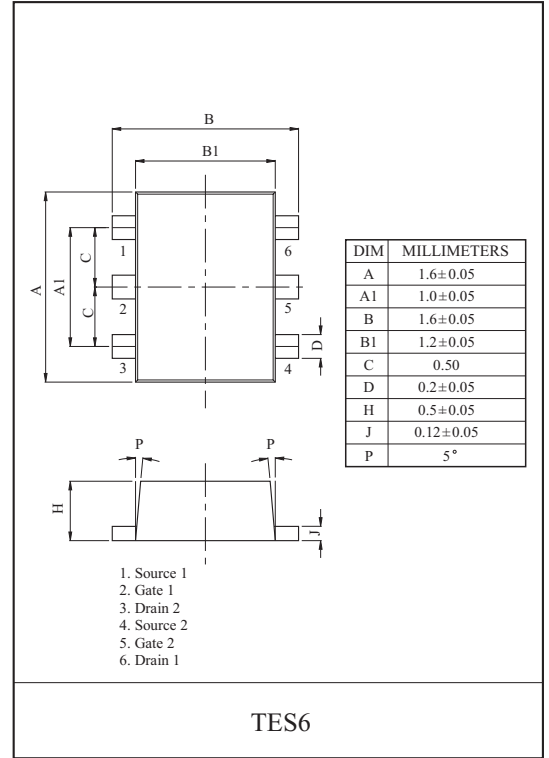


General Description

It's Mainly Suitable for Load Switching Cell Phones, Battery Powered Systems and Level-Shifter.

FEATURES

- N-Channel
 - : $V_{DSS}=20V$, $I_D=600mA$ ($R_{DS(ON)}=0.70$ @ $V_{GS}=4.5V$).
 - : $V_{DSS}=20V$, $I_D=500mA$ ($R_{DS(ON)}=0.85$ @ $V_{GS}=2.5V$).
 - : $V_{DSS}=20V$, $I_D=350mA$ ($R_{DS(ON)}=1.25$ @ $V_{GS}=1.8V$).
- P-Channel
 - : $V_{DSS}=-20V$, $I_D=-400mA$ ($R_{DS(ON)}=1.2$ @ $V_{GS}=-4.5V$).
 - : $V_{DSS}=-20V$, $I_D=-300mA$ ($R_{DS(ON)}=1.6$ @ $V_{GS}=-2.5V$).
 - : $V_{DSS}=-20V$, $I_D=-150mA$ ($R_{DS(ON)}=2.7$ @ $V_{GS}=-1.8V$).

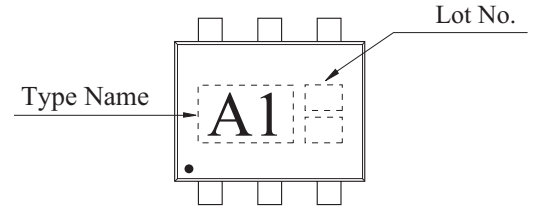


MAXIMUM RATING (Ta=25 °C)

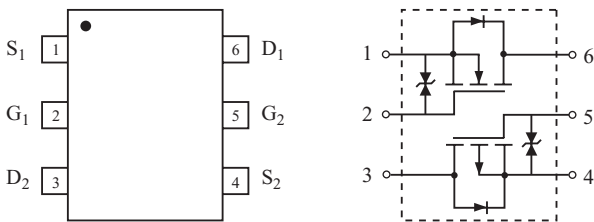
CHARACTERISTIC		SYMBOL	N-Ch	P-Ch	UNIT
Drain-Source Voltage		V_{DSS}	20	-20	V
Gate-Source Voltage		V_{GSS}	± 6	± 6	V
Drain Current	DC @ $T_A=25$	I_D^*	515	-390	mA
	DC @ $T_A=85$		370	-280	
	Pulsed	I_{DP}	650	-650	
Source-Drain Diode Current		I_S	450	-450	
Drain Power Dissipation		P_D^*	280	280	mW
Maximum Junction Temperature		T_j	150		
Storage Temperature Range		T_{stg}	-55 150		
Thermal Resistance, Junction to Ambient		R_{thJA}^*	446		/W

Note 1) *Surface Mounted on FR4 Board, t 5sec

Marking



PIN CONNECTION (TOP VIEW)



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ELECTRICAL CHARACTERISTICS (Ta=25)

CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Static							
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250 μA, V _{GS} =0V	N-Ch	20	-	-	V
		I _D =-250 μA, V _{GS} =0V	P-Ch	-20	-	-	
Drain Cut-off Current	I _{DSS}	V _{GS} =0V, V _{DS} =16V	N-Ch	-	0.3	100	nA
		V _{GS} =0V, V _{DS} =-16V	P-Ch	-	-0.3	-100	
Gate Leakage Current	I _{GSS}	V _{GS} = ± 4.5V, V _{DS} =0V	N-Ch	-	± 0.5	± 1.0	μA
			P-Ch	-	± 1.0	± 2.0	
Gate Threshold Voltage	V _{th}	V _{DS} =V _{GS} , I _D =250 μA	N-Ch	0.45	-	1.0	V
		V _{DS} =V _{GS} , I _D =-250 μA	P-Ch	-0.45	-	-1.0	
Drain-Source ON Resistance	R _{DS(ON)} *	V _{GS} =4.5V, I _D =600mA	N-Ch	-	0.41	0.70	
		V _{GS} =-4.5V, I _D =-350mA	P-Ch	-	0.80	1.20	
		V _{GS} =2.5V, I _D =500mA	N-Ch	-	0.53	0.85	
		V _{GS} =-2.5V, I _D =-300mA	P-Ch	-	1.20	1.60	
		V _{GS} =1.8V, I _D =350mA	N-Ch	-	0.70	1.25	
		V _{GS} =-1.8V, I _D =-150mA	P-Ch	-	1.80	2.70	
ON State Drain Current	I _{D(ON)} *	V _{GS} =4.5V, V _{DS} =5V	N-Ch	700	-	-	mA
		V _{GS} =-4.5V, V _{DS} =-5V	P-Ch	-700	-	-	
Forward Transconductance	g _{fs} *	V _{DS} =10V, I _D =400mA	N-Ch	-	1.0	-	S
		V _{DS} =-10V, I _D =-250mA	P-Ch	-	0.4	-	
Source-Drain Diode Forward Voltage	V _{SD} *	I _S =150mA, V _{GS} =0V	N-Ch	-	0.8	1.2	V
		I _S =-150mA, V _{GS} =0V	P-Ch	-	-0.8	-1.2	
Dynamic							
Total Gate Charge	Q _g *	N-Ch : V _{DS} =10V, I _D =250mA, V _{GS} =4.5V P-Ch : V _{DS} =-10V, I _D =-250mA, V _{GS} =-4.5V	N-Ch	-	750	-	pC
			P-Ch	-	1500	-	
Gate-Source Charge	Q _{gs} *		N-Ch	-	75	-	
			P-Ch	-	150	-	
Gate-Drain Charge	Q _{gd} *		N-Ch	-	225	-	
			P-Ch	-	450	-	
Turn-on Delay time	t _{d(on)} *	N-Ch : V _{DD} =10V, I _D =200mA, V _{GS} =4.5V, R _G =10 P-Ch : V _{DD} =-10V, V _{GS} =-4.5V, I _D =-200mA, R _G =10	N-Ch	-	5	-	ns
			P-Ch	-	5	-	
Turn-off Delay time	t _{d(off)} *		N-Ch	-	25	-	
			P-Ch	-	35	-	

Note 2) *Pulse test : Pulse width 300μs, Duty Cycle 2%.

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N-Channel

Fig 1. $I_D - V_{DS}$

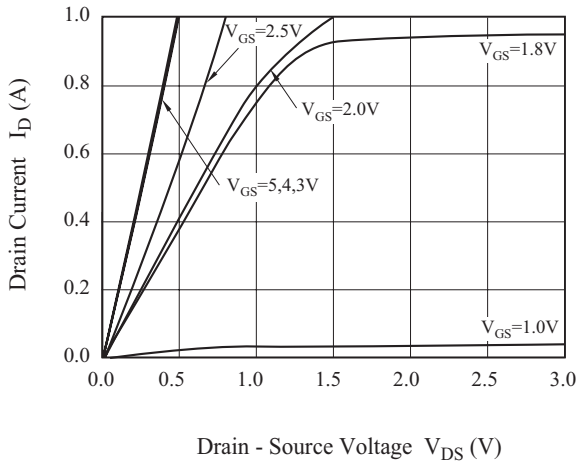


Fig 2. $R_{DS(on)} - I_D$

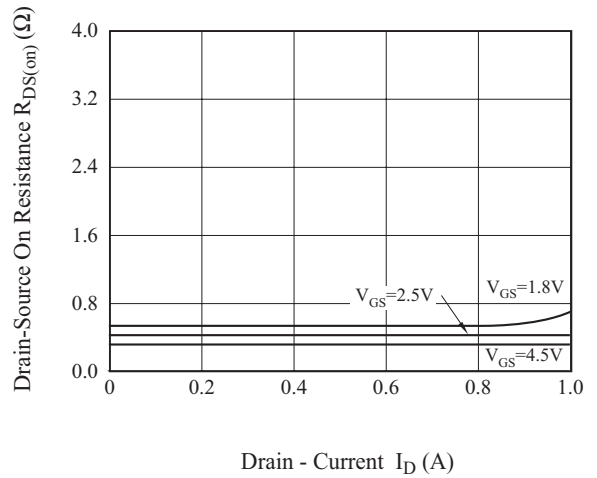


Fig 3. $I_D - V_{GS}$

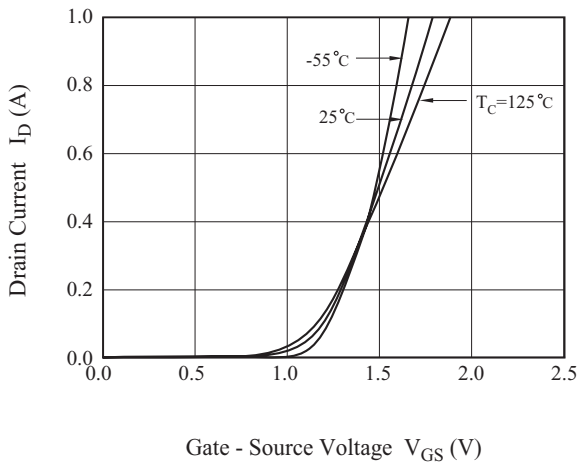


Fig 4. $R_{DS(ON)} - T_j$

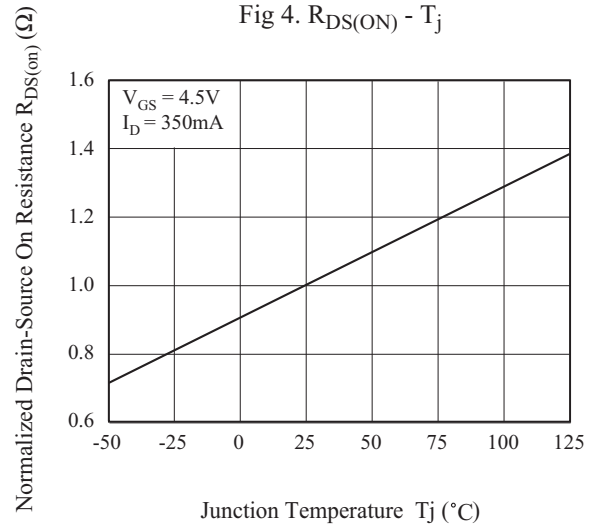


Fig 5. $V_{th} - T_j$

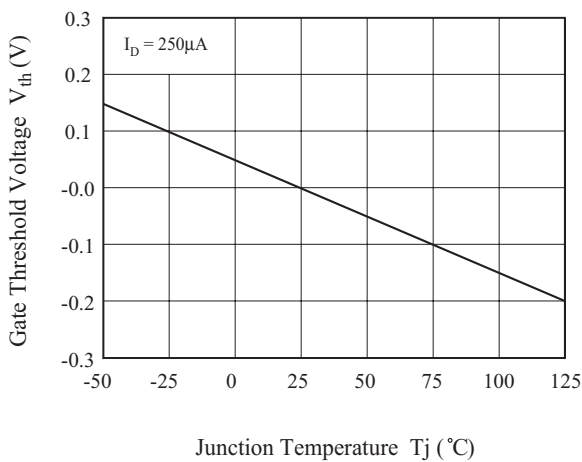
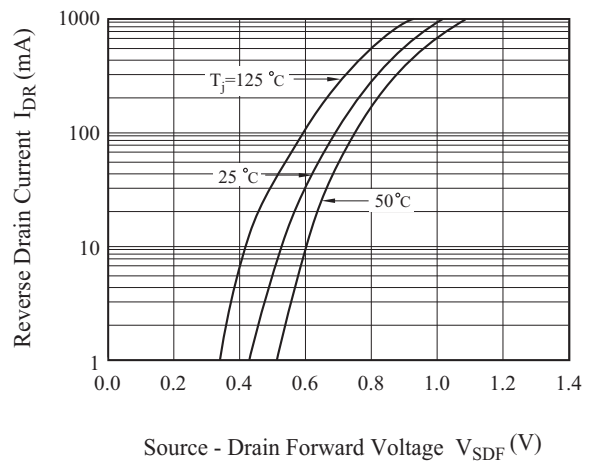


Fig 6. $I_{DR} - V_{SDF}$



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Fig 7. $V_{GS} - Q_g$

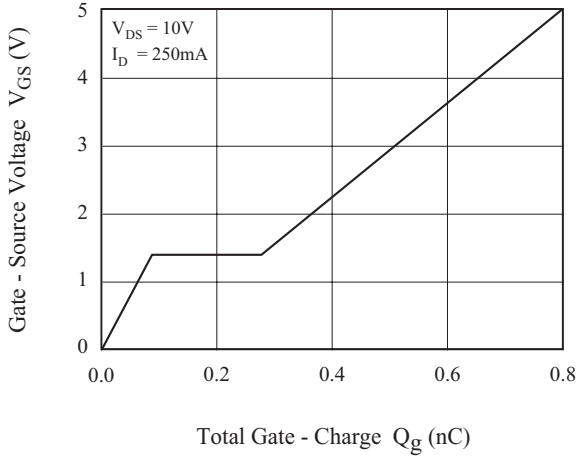


Fig 8. $C - V_{DS}$

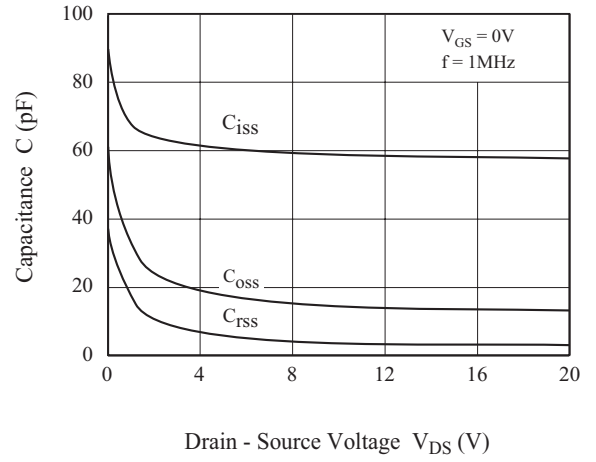
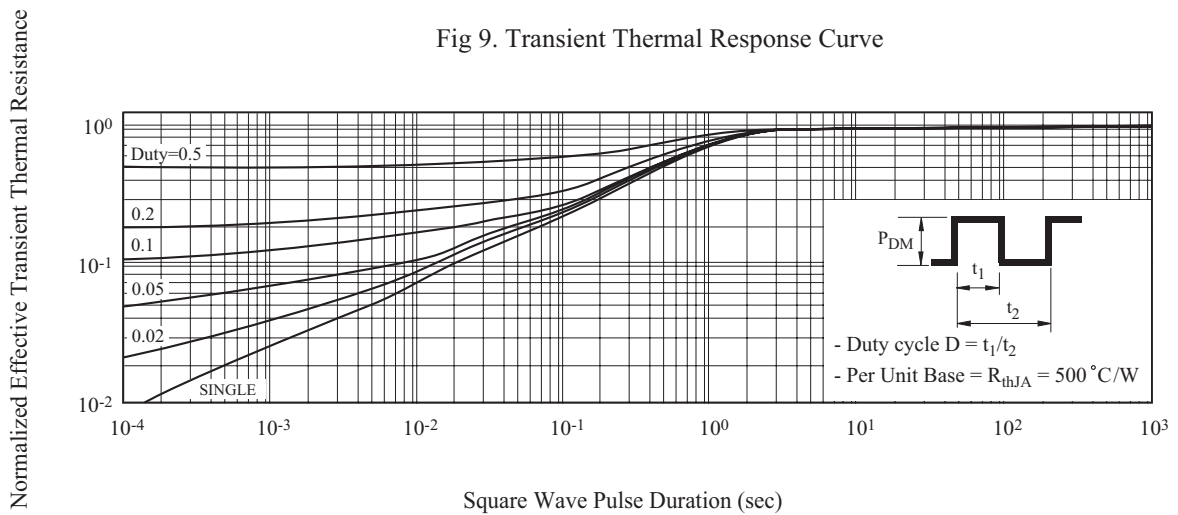


Fig 9. Transient Thermal Response Curve



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P-Channel

Fig 1. $I_D - V_{DS}$

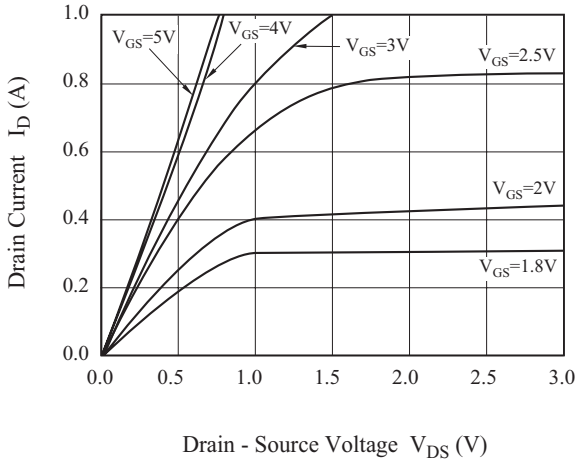


Fig 2. $R_{DS(on)} - I_D$

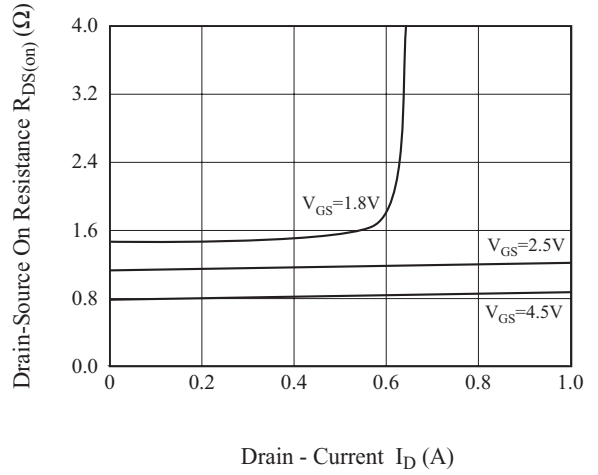


Fig 3. $I_D - V_{GS}$

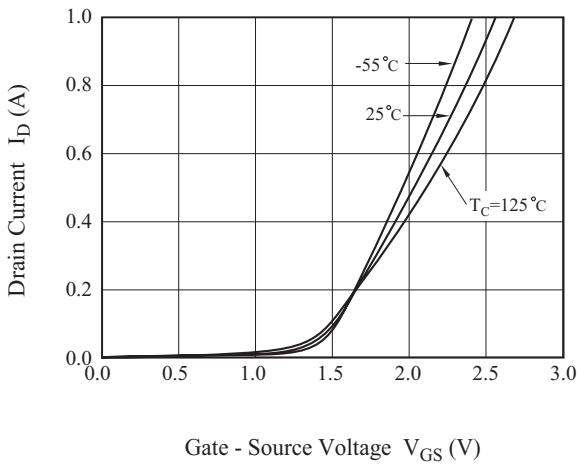


Fig 4. $R_{DS(ON)} - T_j$

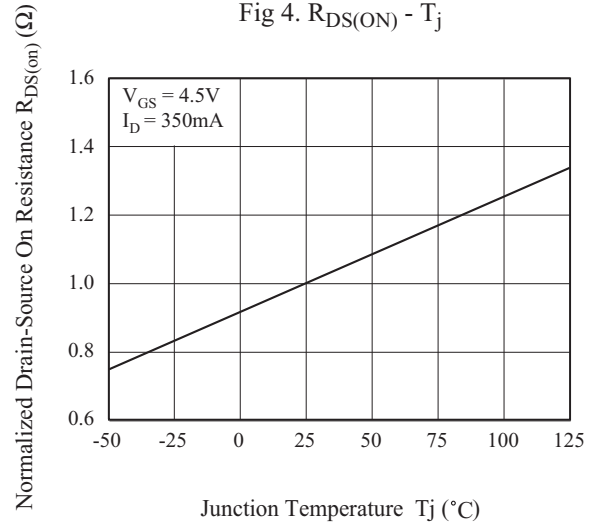


Fig 5. $V_{th} - T_j$

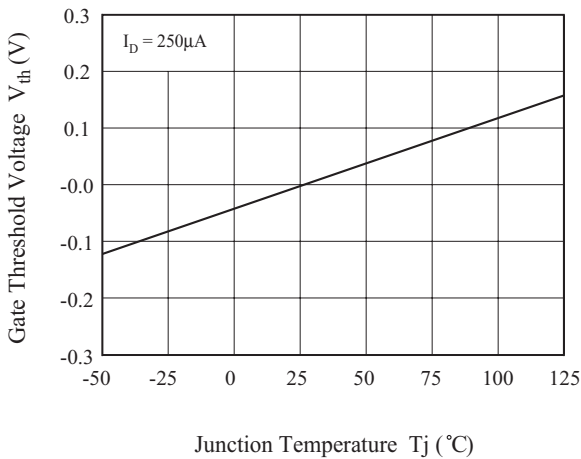
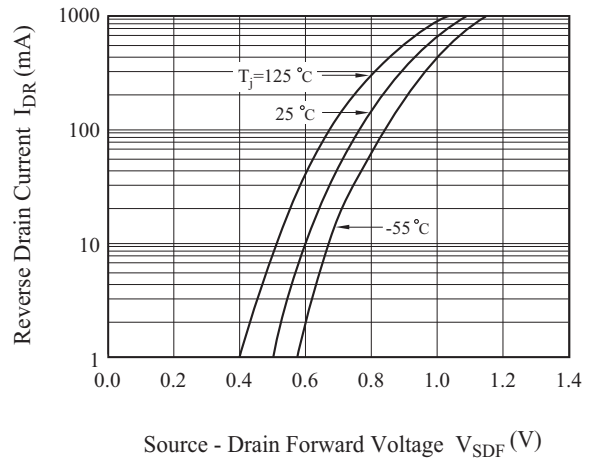


Fig 6. $I_{DR} - V_{SDF}$



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Fig 7. $V_{GS} - Q_g$

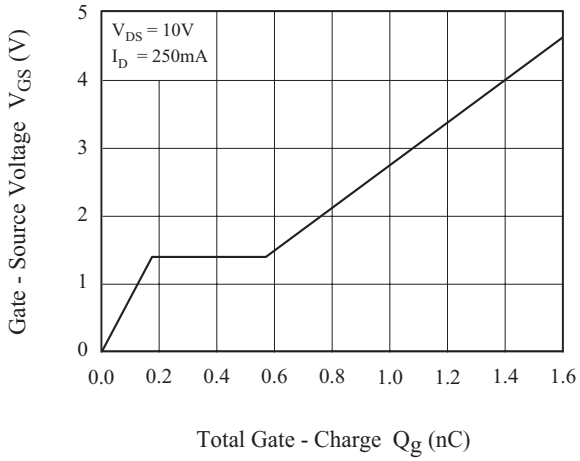


Fig 8. $C - V_{DS}$

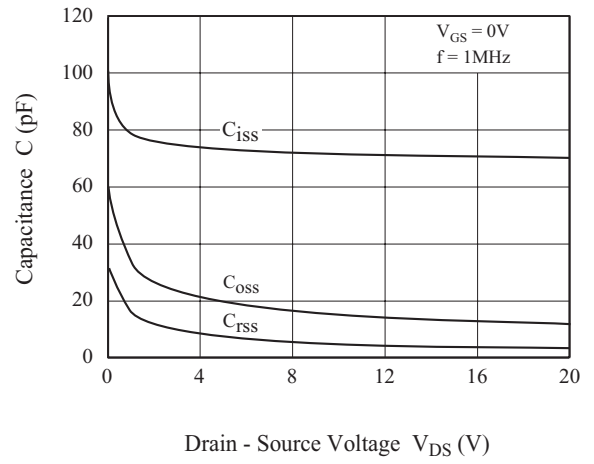


Fig 9. Transient Thermal Response Curve

