

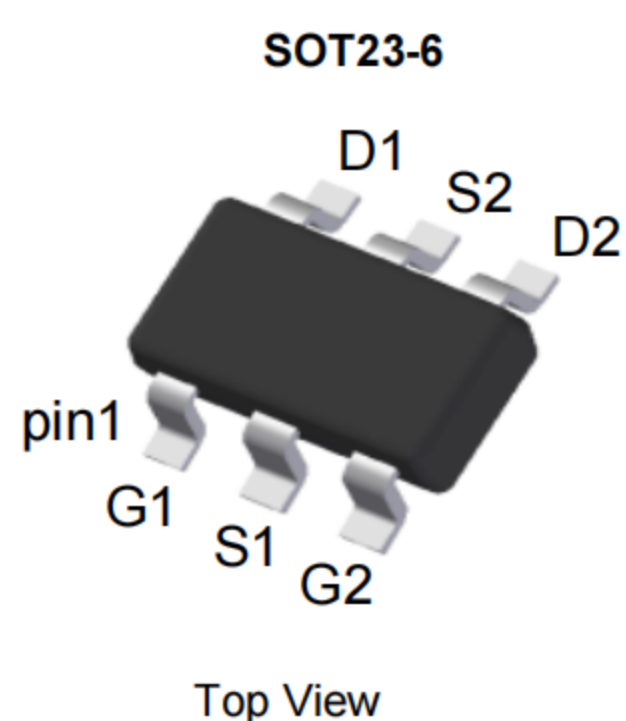
Product Summary

- $V_{DS}=60V$
- $I_D=0.5A$
- $R_{DS(ON)}=1.7\Omega @ V_{GS}=-10V$

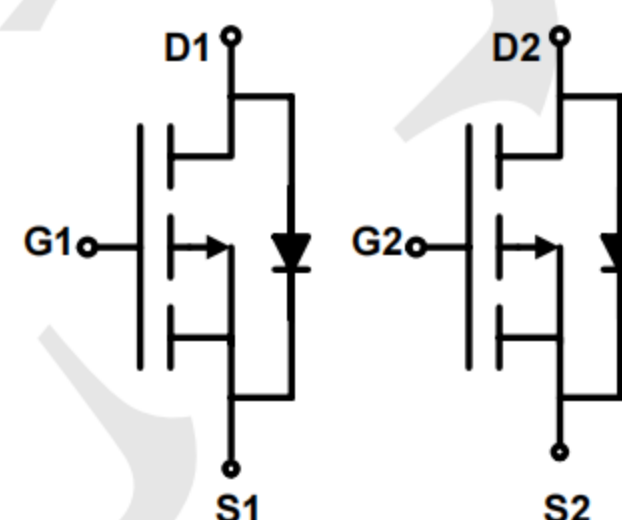
Typical Applications

- Line current interrupter in telephone sets
- High speed and line transformer drivers

Package and Pin Configuration



Circuit diagram



Marking:03PL

MAXIMUM RATINGS (@ $T_A=25^\circ C$ unless otherwise specified)

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source Voltage	-60	V
V_{GSS}	Gate -Source Voltage	± 20	V
I_D	Continuous Drain Current	-0.5	A
P_D	Power Dissipation	1.1	W
$R_{\theta JA}$	Junction-to-Air	130	$^\circ C/W$
T_J	Junction Temperature	150	$^\circ C$
T_{STG}	Storage Temperature Range	-55 to +150	$^\circ C$

Electrical Characteristics (@T_A=25°C unless otherwise specified)

Symbol	Parameter	Test conditions	MIN	TYP	MAX	UNIT
OFF Characteristics						
V _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-60	-	-	V
I _{DSS}	Drain to Source Leakage Current	V _{DS} =-50V, V _{GS} =0V	-	-	-100	nA
I _{GSS}	Gate-body Leakage	V _{GS} =±20V, V _{DS} =0V	-	-	±1	uA
ON Characteristics ^(NOTE2)						
R _{DS(ON)}	Static Drain-Source On-resistance	V _{GS} =-4.5V, I _D =-0.2A	-	-	3	Ω
		V _{GS} =-10V, I _D =-0.5A	-	1.7	2	
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D =-250uA	-1	-1.8	-3	V
Dynamic Characteristics ^(NOTE3)						
C _{iss}	Input Capacitance	V _{GS} = 0V	-	50	-	pF
C _{oss}	Output Capacitance	V _{DS} = -25V	-	15	-	
C _{rss}	Reverse Transfer Capacitance	f = 1.0MHz	-	5	-	
Switching Characteristics ^(NOTE3)						
t _{d(on)}	Turn-on Delay Time	V _{DD} =-30V, I _D =-0.27A V _{GS} =-10V, R _G =6Ω	-	2.5	5	nS
t _r	Turn-on Rise Time		-	6.3	13	
t _{d(off)}	Turn-Off Delay Time		-	10	20	
t _f	Turn-Off Fall Time		-	4.8	9.6	
Q _g	Total Gate Charge	V _{DS} =-25V, I _D =-0.1A V _{GS} =-5V	-	0.9	1.3	nC
Q _{gs}	Gate-Source Charge		-	0.2	-	
Q _{gd}	Gate-Drain Charge		-	0.3	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage ^(NOTE1)	I _{SD} =-0.26A, V _{GS} =0V	-	-0.8	-1.4	V
I _s	Diode Continuous Forward Current	T _C =25°C	-	-	-0.5	A



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NDC7003P

Dual P-Channel 20V (D-S) MOSFET

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Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

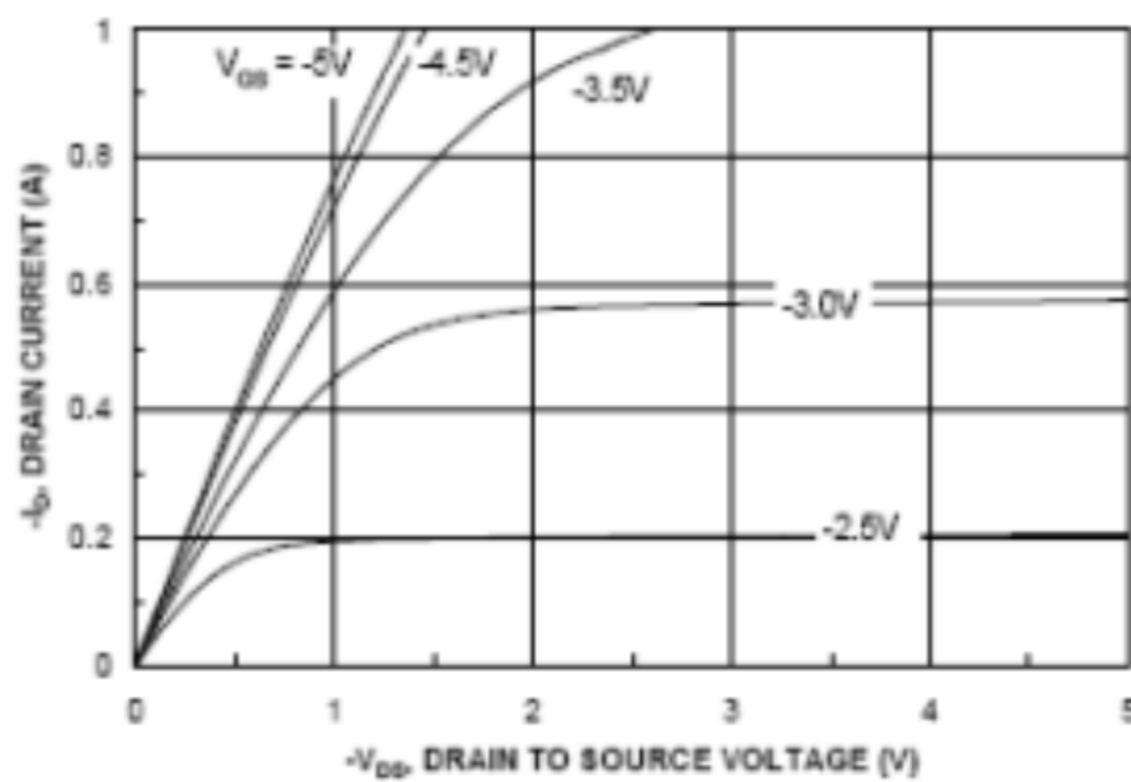


Figure 1. On-Region Characteristics.

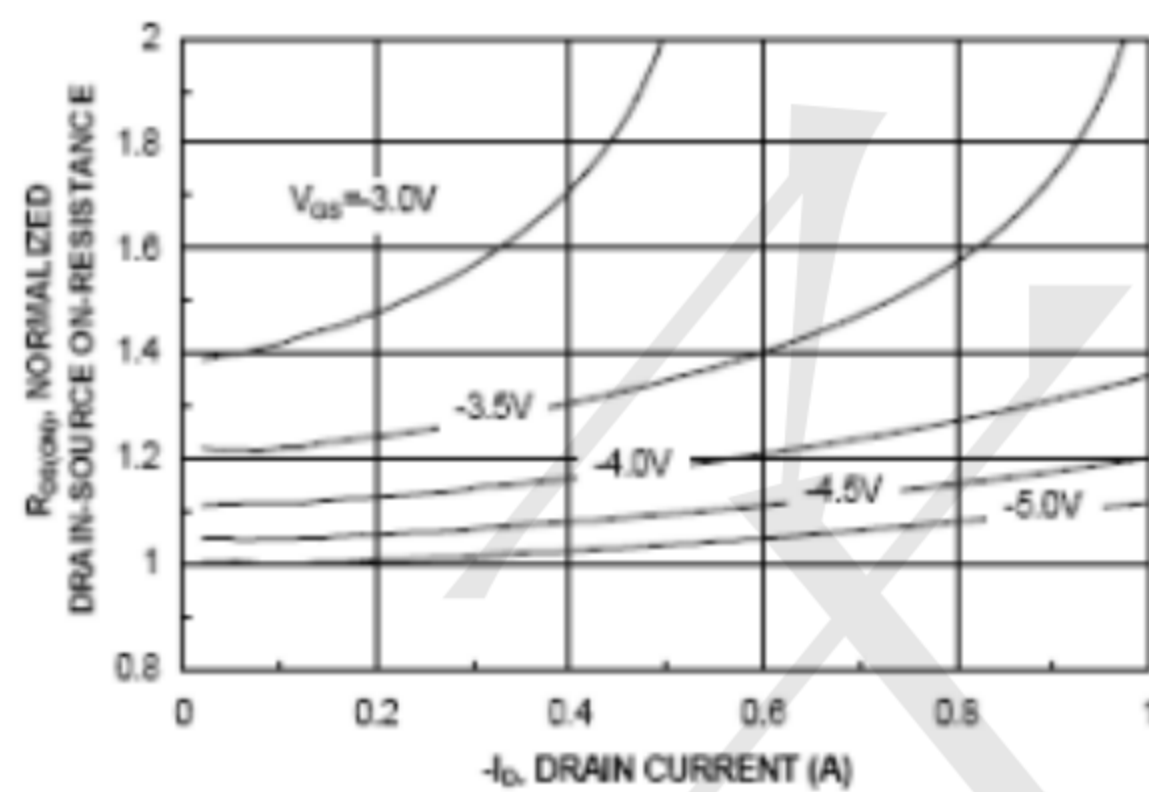


Figure 2. On-Resistance Variation with Drain Current and Gate Voltage.

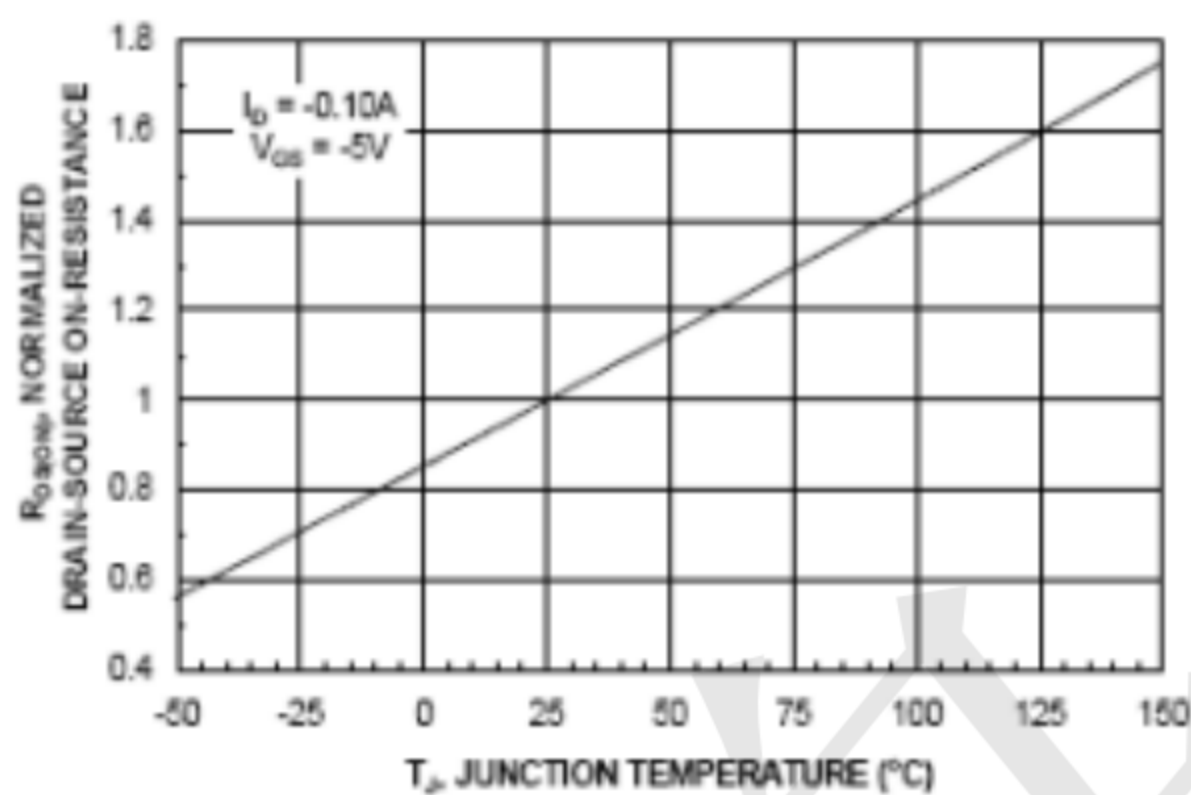


Figure 3. On-Resistance Variation with Temperature.

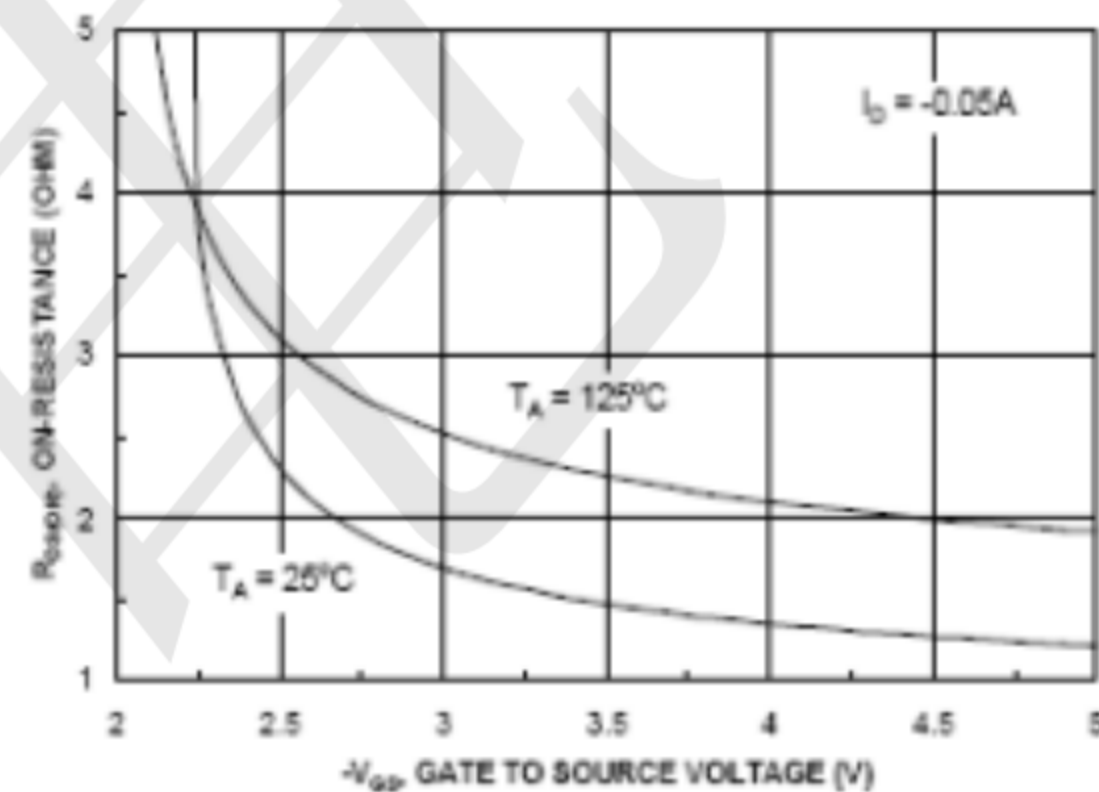


Figure 4. On-Resistance Variation with Gate-to-Source Voltage.

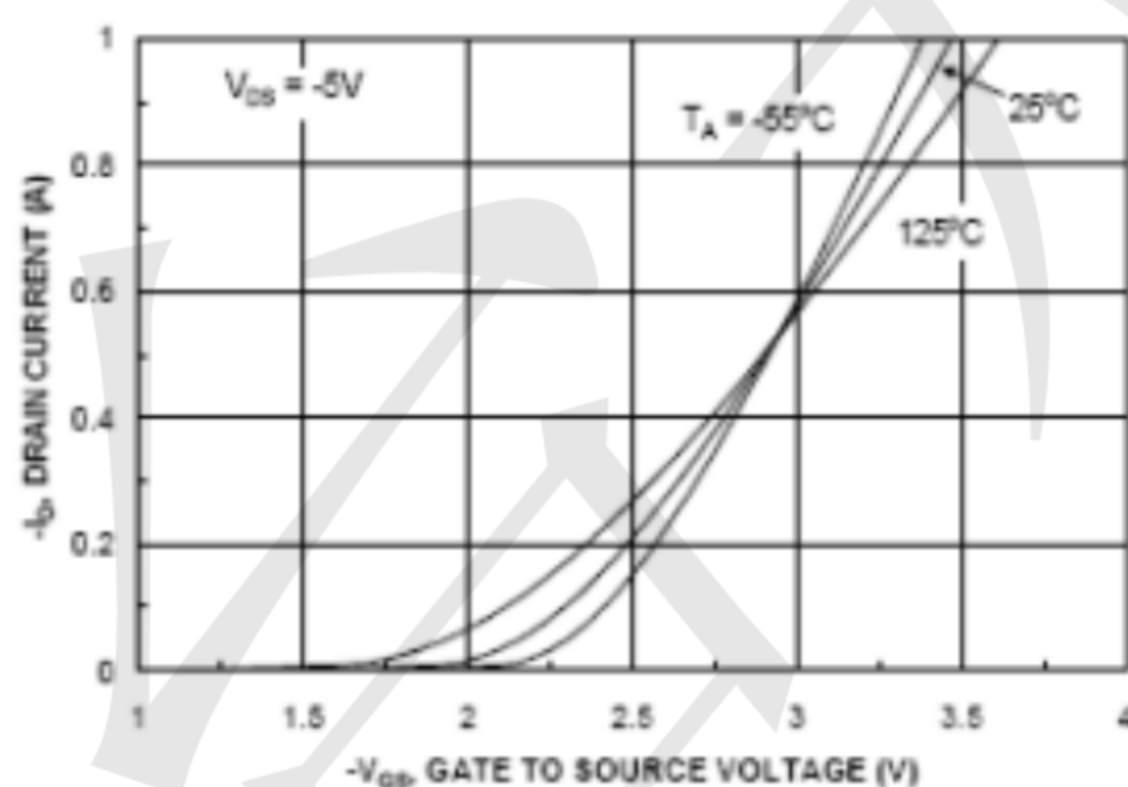


Figure 5. Transfer Characteristics.

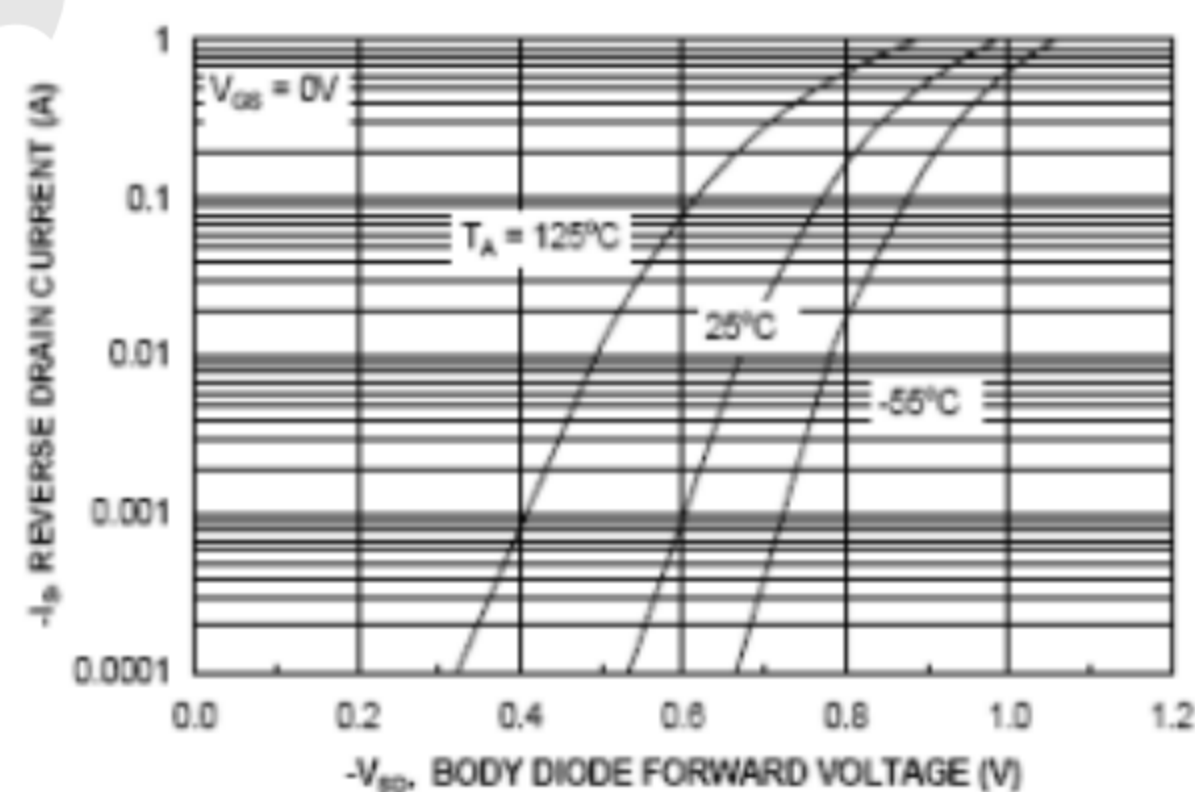


Figure 6. Body Diode Forward Voltage Variation with Source Current and Temperature.



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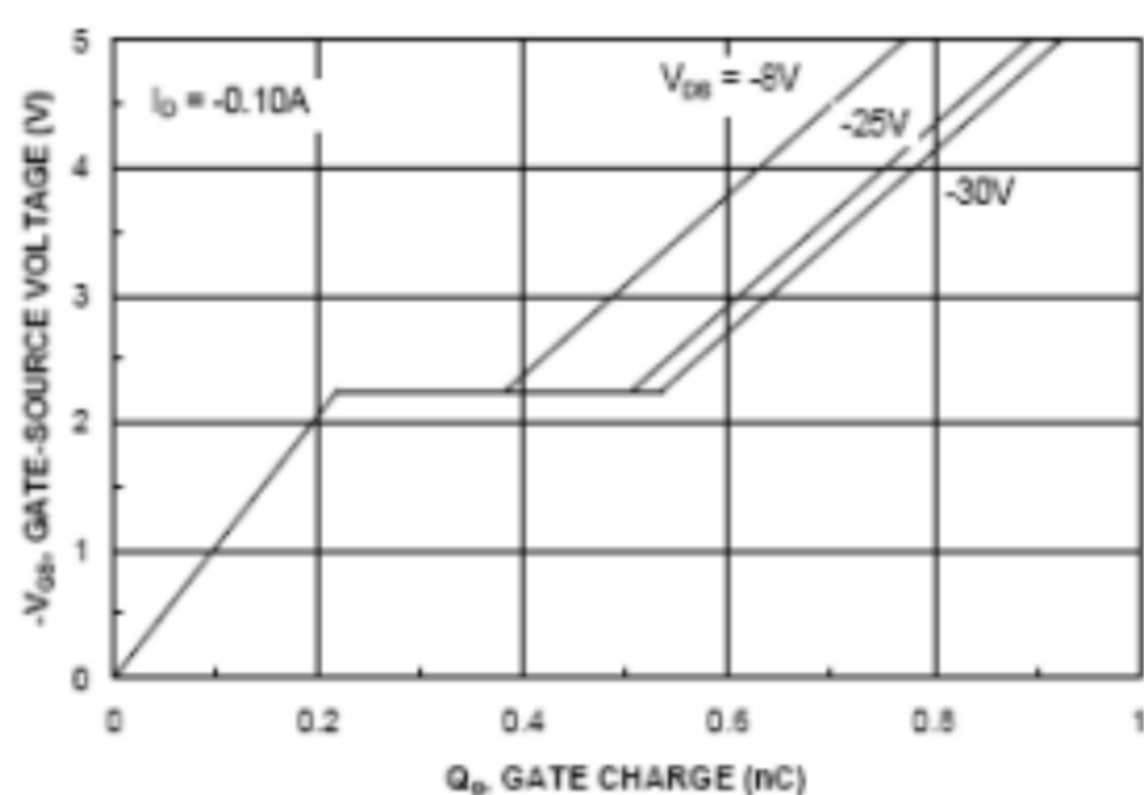


Figure 7. Gate Charge Characteristics.

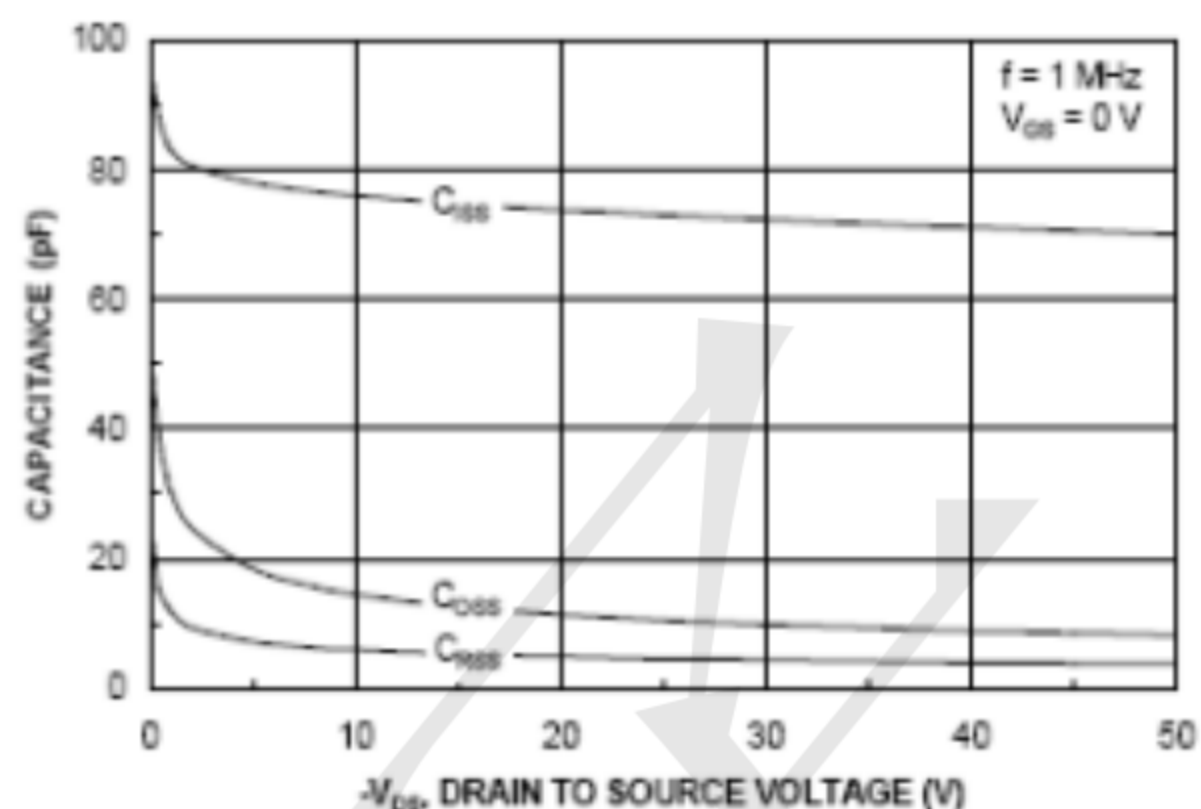


Figure 8. Capacitance Characteristics.

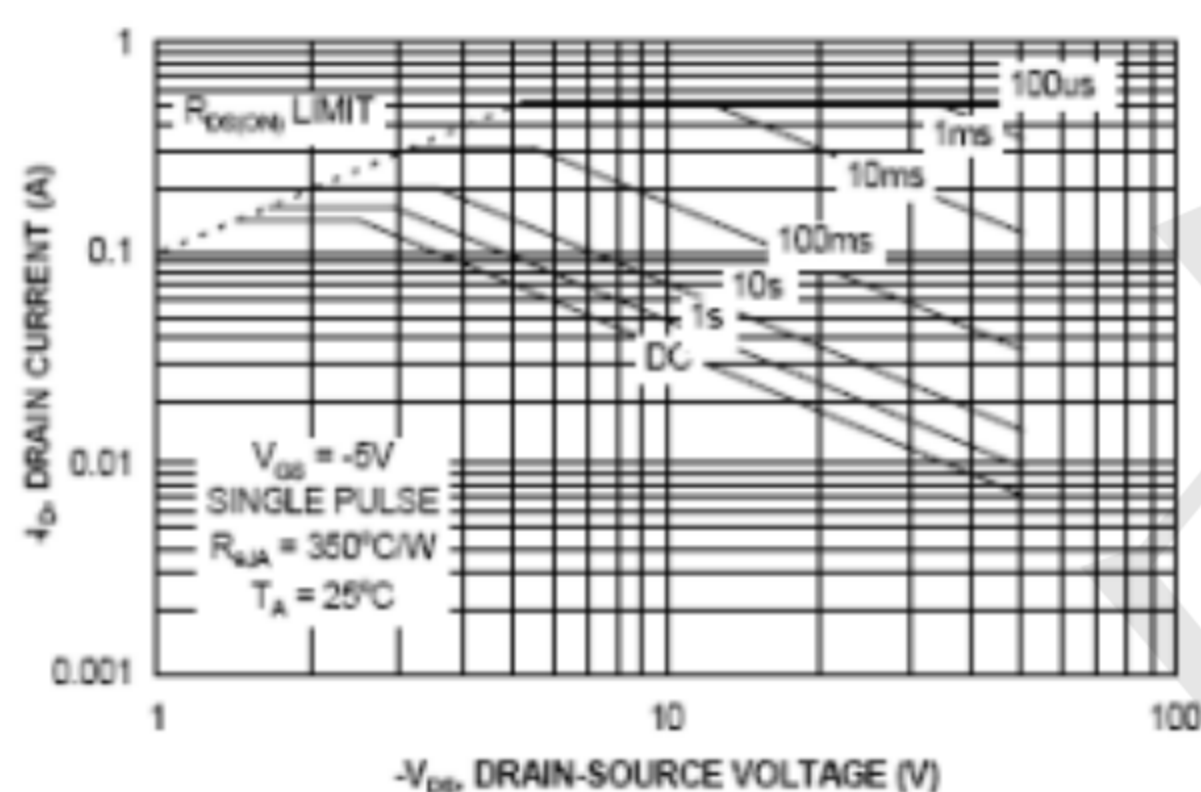


Figure 9. Maximum Safe Operating Area.

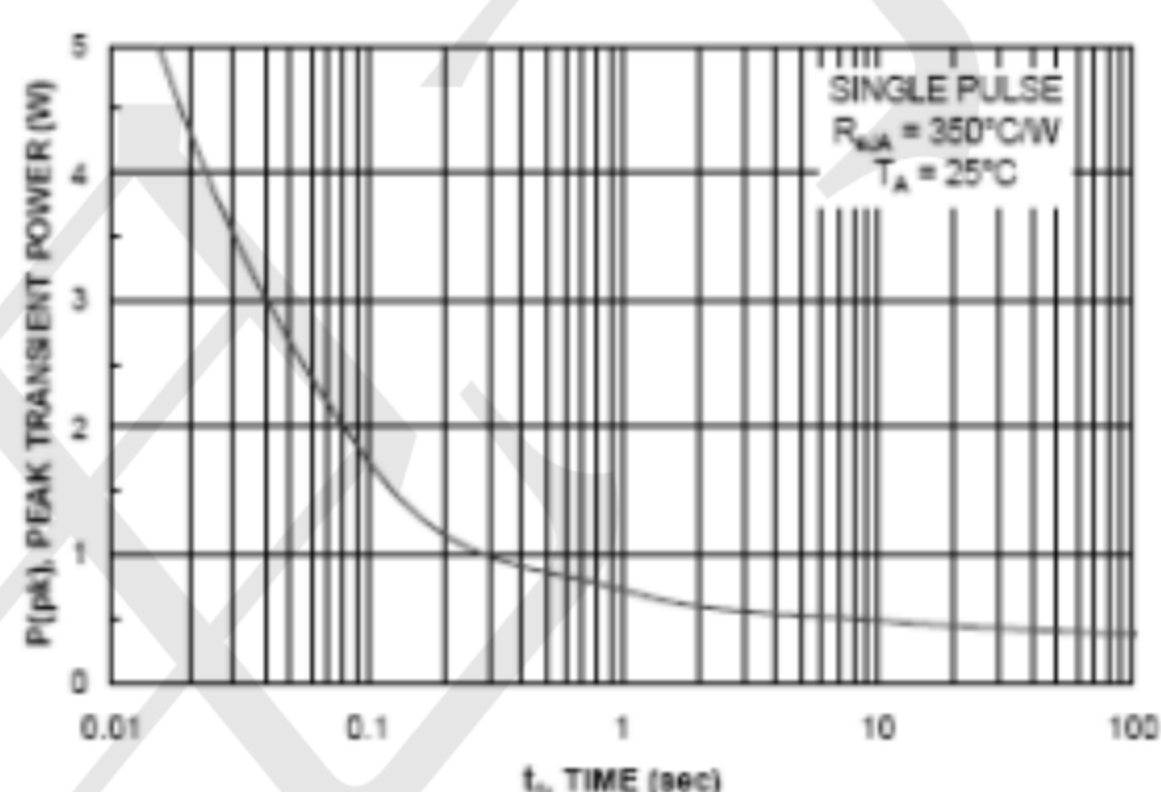


Figure 10. Single Pulse Maximum Power Dissipation.

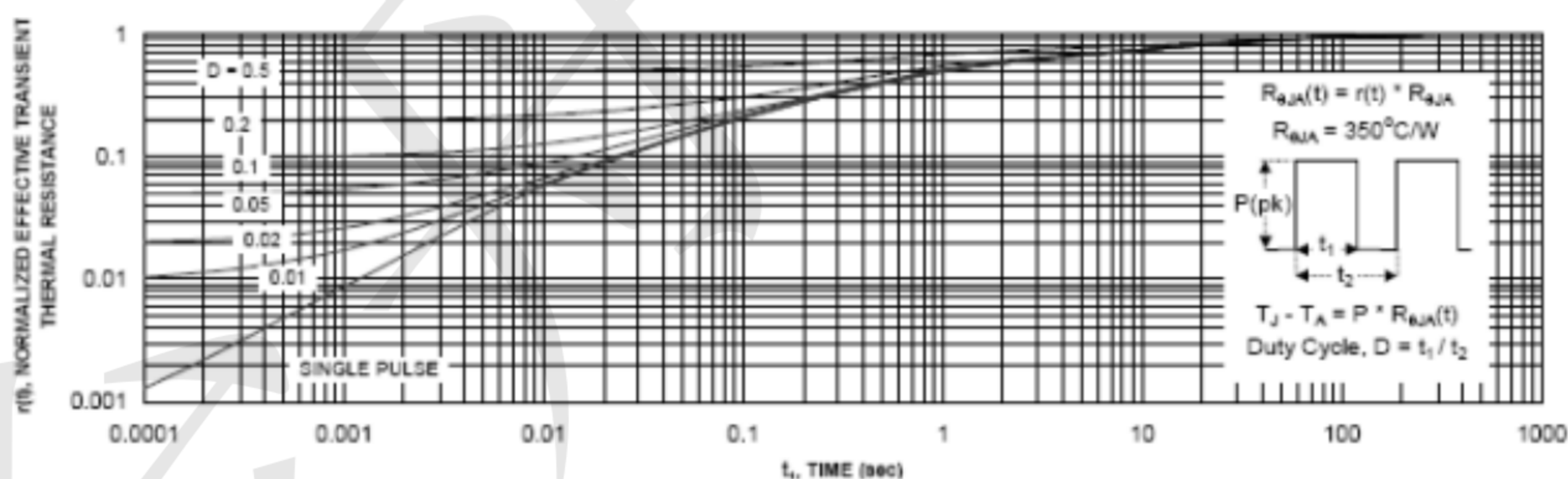
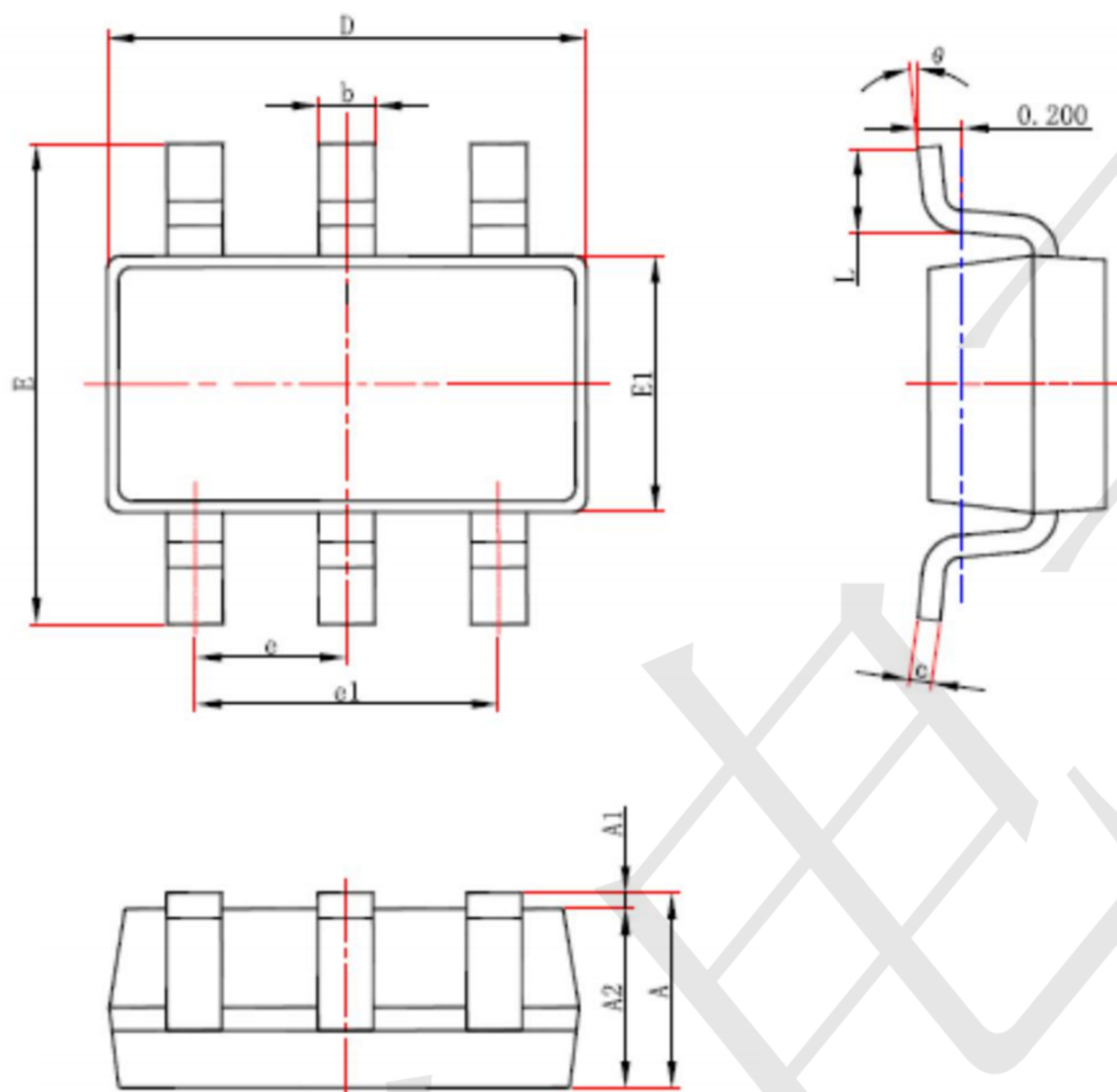


Figure 11. Transient Thermal Response Curve.

Thermal characterization performed using the conditions described in Note 1a. Transient thermal response will change depending on the circuit board design.

SOT23-6 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°