

Electrical Characteristics, at $T_j = 25^\circ\text{C}$, unless otherwise specified

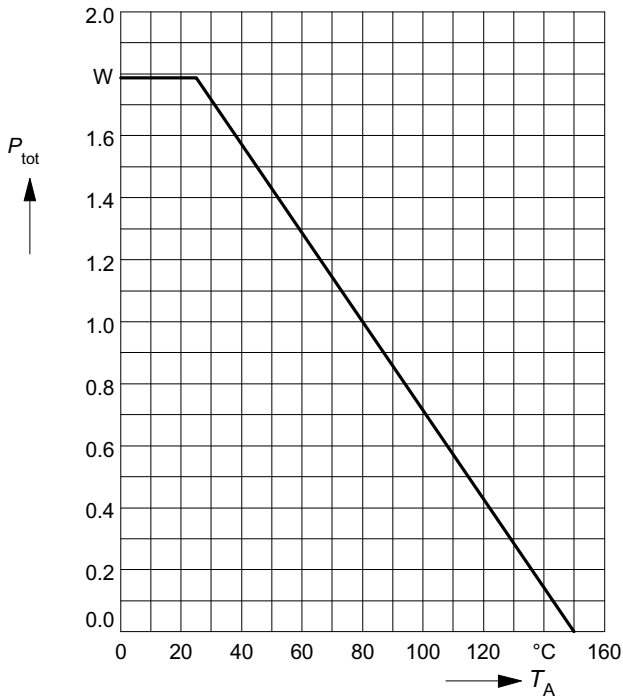
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Dynamic Characteristics					
Transconductance $V_{DS} \geq 2 \cdot I_D \cdot R_{DS(on)max}$, $I_D = 0.19 \text{ A}$	g_{fs}	0.06	0.27	-	S
Input capacitance $V_{GS} = 0 \text{ V}$, $V_{DS} = 25 \text{ V}$, $f = 1 \text{ MHz}$	C_{iss}	-	170	230	pF
Output capacitance $V_{GS} = 0 \text{ V}$, $V_{DS} = 25 \text{ V}$, $f = 1 \text{ MHz}$	C_{oss}	-	20	30	
Reverse transfer capacitance $V_{GS} = 0 \text{ V}$, $V_{DS} = 25 \text{ V}$, $f = 1 \text{ MHz}$	C_{rss}	-	10	15	
Turn-on delay time $V_{DD} = 30 \text{ V}$, $V_{GS} = 10 \text{ V}$, $I_D = 0.25 \text{ A}$ $R_{GS} = 50 \Omega$	$t_{d(on)}$	-	7	11	ns
Rise time $V_{DD} = 30 \text{ V}$, $V_{GS} = 10 \text{ V}$, $I_D = 0.25 \text{ A}$ $R_{GS} = 50 \Omega$	t_r	-	16	24	
Turn-off delay time $V_{DD} = 30 \text{ V}$, $V_{GS} = 10 \text{ V}$, $I_D = 0.25 \text{ A}$ $R_{GS} = 50 \Omega$	$t_{d(off)}$	-	27	36	
Fall time $V_{DD} = 30 \text{ V}$, $V_{GS} = 10 \text{ V}$, $I_D = 0.25 \text{ A}$ $R_{GS} = 50 \Omega$	t_f	-	21	28	

Electrical Characteristics, at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Reverse Diode					
Inverse diode continuous forward current $T_A = 25^\circ\text{C}$	I_S	-	-	0.19	A
Inverse diode direct current,pulsed $T_A = 25^\circ\text{C}$	I_{SM}	-	-	0.76	
Inverse diode forward voltage $V_{GS} = 0\text{ V}$, $I_F = 0.38\text{ A}$, $T_j = 25^\circ\text{C}$	V_{SD}	-	1	1.4	V
Reverse recovery time $V_R = 30\text{ V}$, $I_F = I_S = 0$, $di_F/dt = 100\text{ A}/\mu\text{s}$	t_{rr}	-	95	-	ns
Reverse recovery charge $V_R = 30\text{ V}$, $I_F = I_S = 0$, $di_F/dt = 100\text{ A}/\mu\text{s}$	Q_{rr}	-	0.25	-	μC

Power dissipation

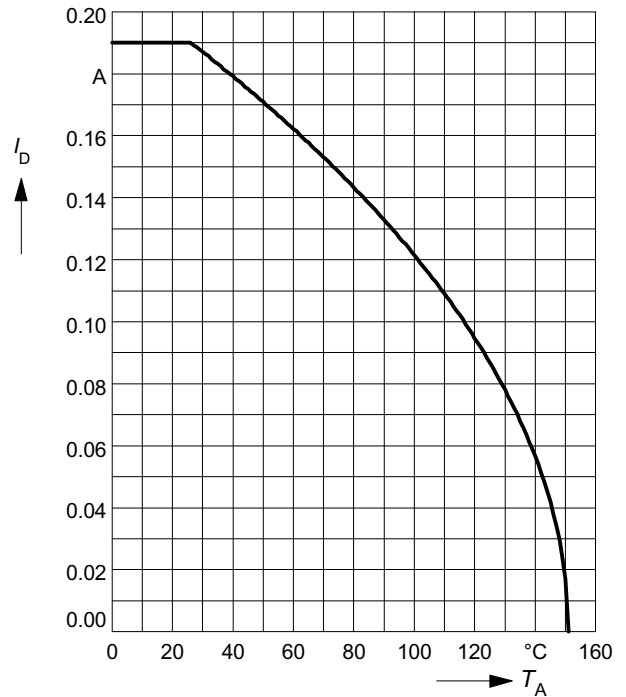
$$P_{tot} = f(T_A)$$



Drain current

$$I_D = f(T_A)$$

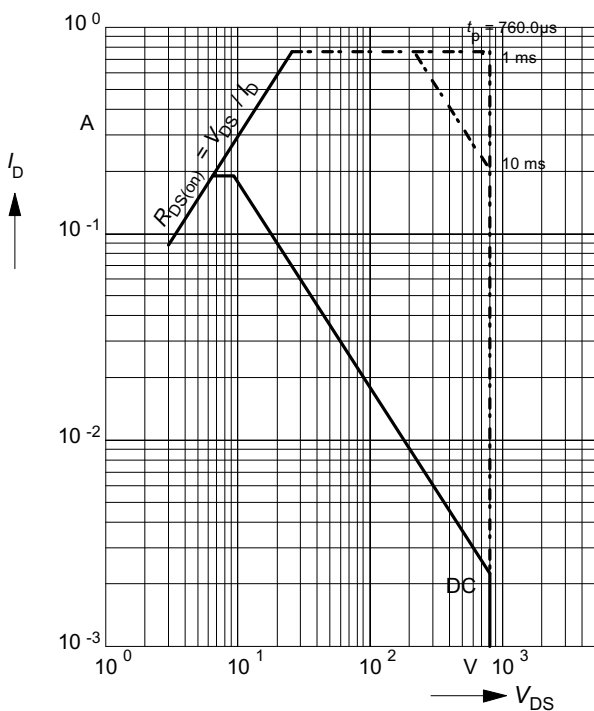
parameter: $V_{GS} \geq 10 \text{ V}$



Safe operating area

$$I_D = f(V_{DS})$$

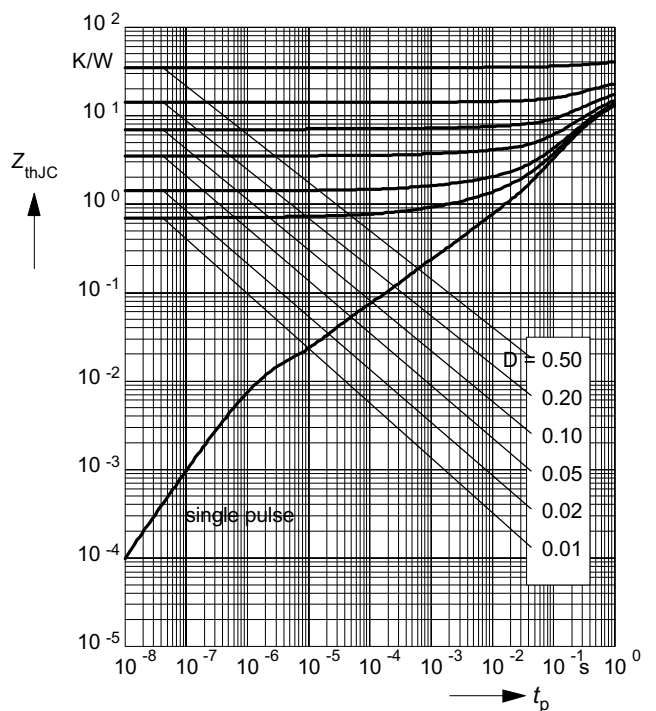
parameter: $D = 0.01, T_C = 25^\circ\text{C}$



Transient thermal impedance

$$Z_{thJA} = f(t_p)$$

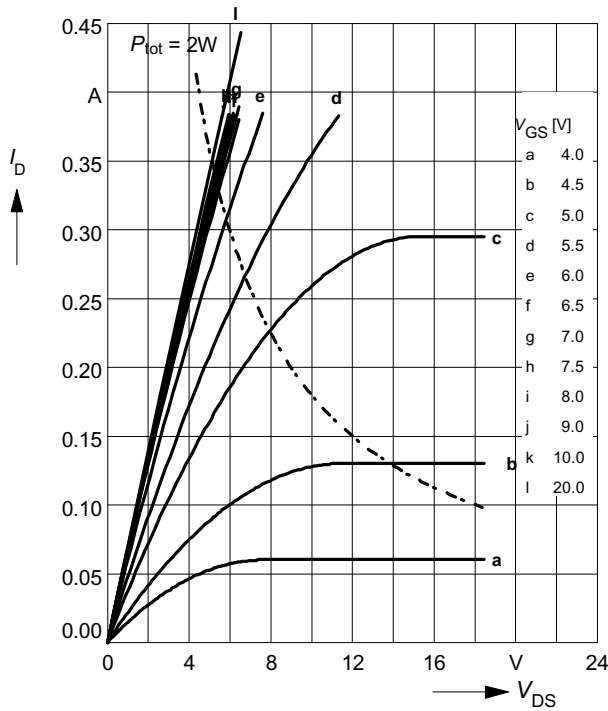
parameter: $D = t_p / T$



Typ. output characteristics

$I_D = f(V_{DS})$

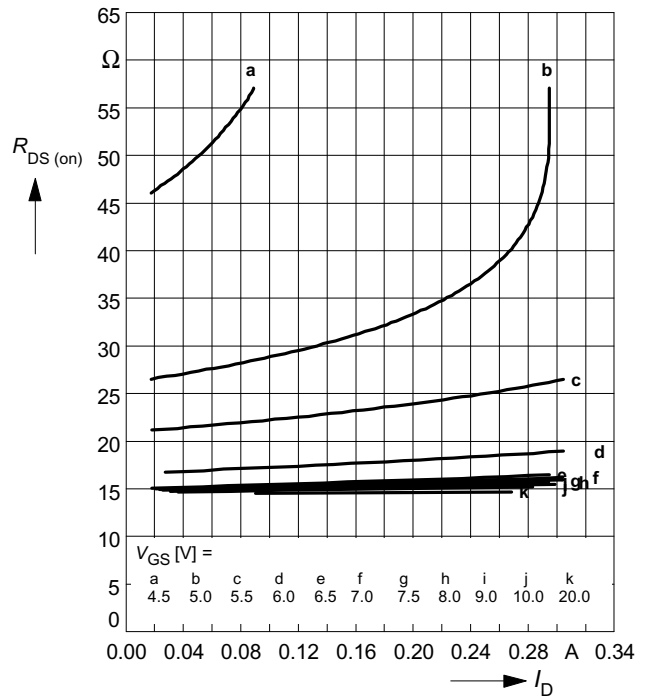
parameter: $t_p = 80 \mu s$, $T_j = 25 \text{ }^\circ\text{C}$



Typ. drain-source on-resistance

$R_{DS(on)} = f(I_D)$

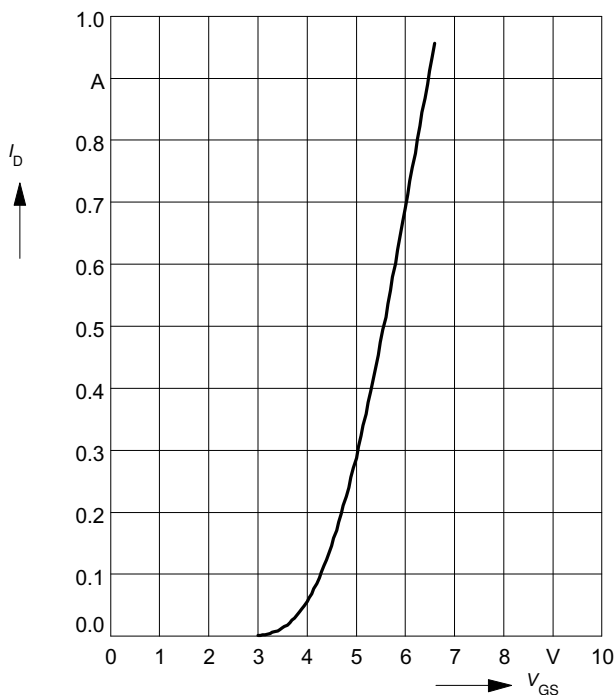
parameter: $t_p = 80 \mu s$, $T_j = 25 \text{ }^\circ\text{C}$



Typ. transfer characteristics $I_D = f(V_{GS})$

parameter: $t_p = 80 \mu s$

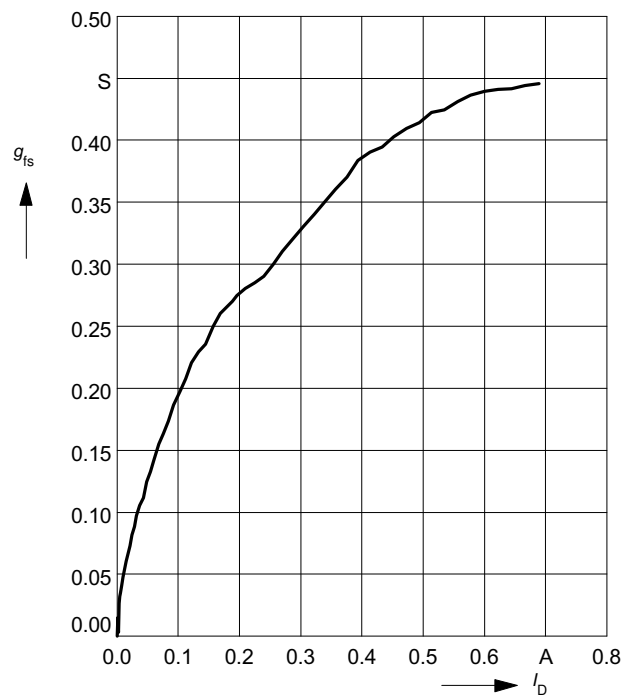
$V_{DS} \geq 2 \times I_D \times R_{DS(on)max}$



Typ. forward transconductance $g_{fs} = f(I_D)$

parameter: $t_p = 80 \mu s$,

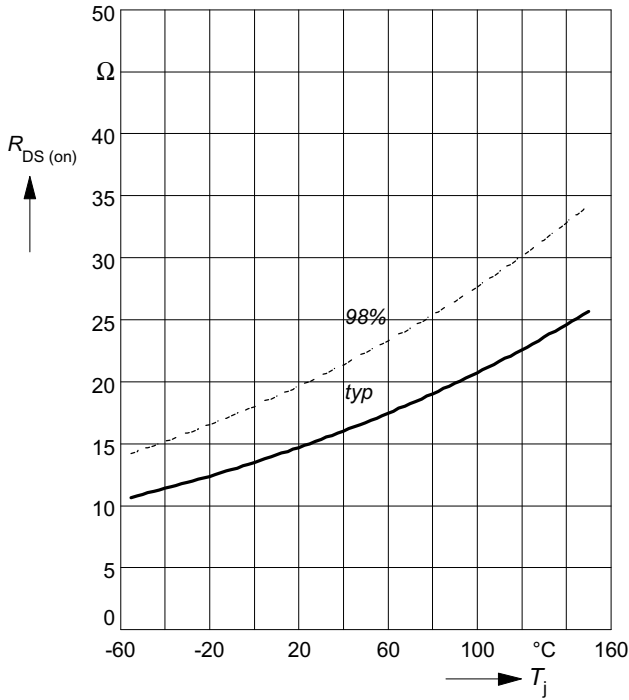
$V_{DS} \geq 2 \times I_D \times R_{DS(on)max}$



Drain-source on-resistance

$$R_{DS(on)} = f(T_j)$$

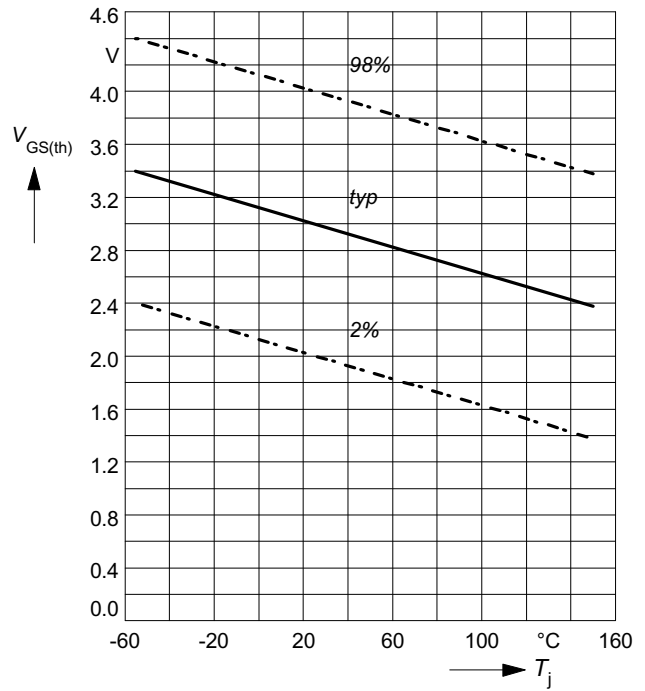
parameter: $I_D = 0.19 \text{ A}$, $V_{GS} = 10 \text{ V}$



Gate threshold voltage

$$V_{GS(th)} = f(T_j)$$

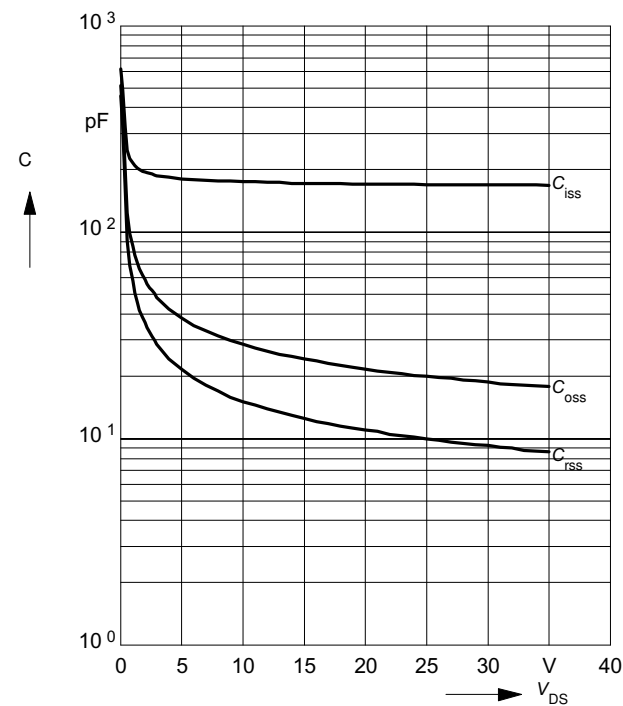
parameter: $V_{GS} = V_{DS}$, $I_D = 1 \text{ mA}$



Typ. capacitances

$$C = f(V_{DS})$$

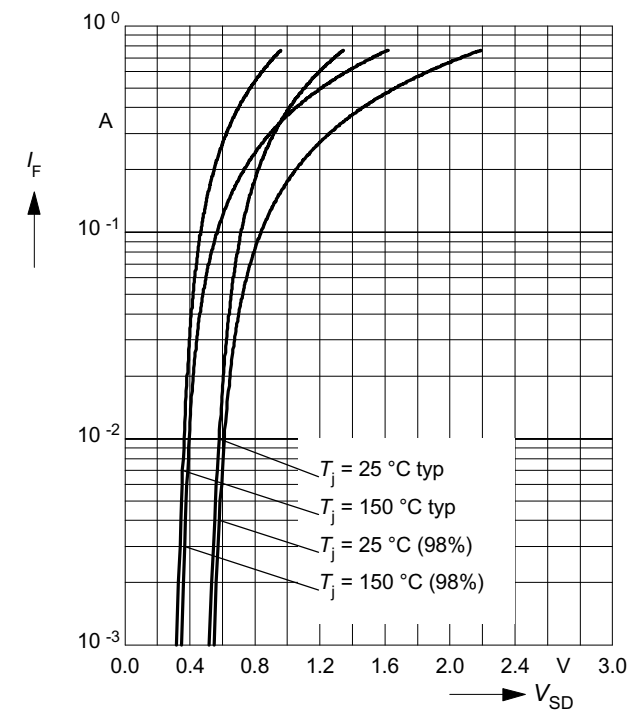
parameter: $V_{GS}=0\text{V}$, $f = 1 \text{ MHz}$



Forward characteristics of reverse diode

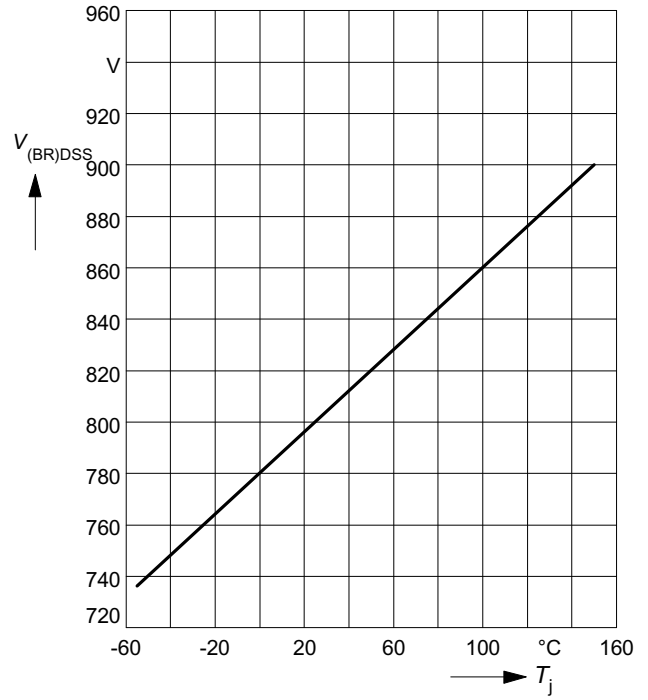
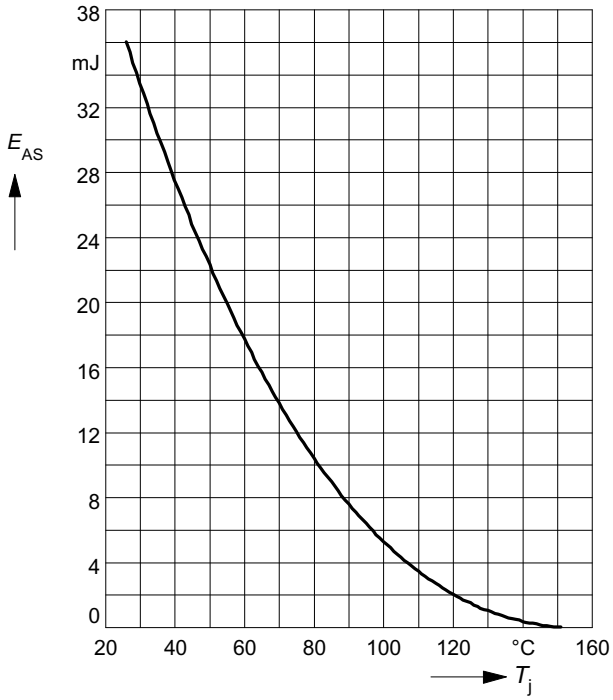
$$I_F = f(V_{SD})$$

parameter: $T_j, t_p = 80 \mu\text{s}$



Avalanche energy $E_{AS} = f(T_j)$
 parameter: $I_D = 0.8 \text{ A}$, $V_{DD} = 50 \text{ V}$
 $R_{GS} = 25 \Omega$, $L = 105 \text{ mH}$

Drain-source breakdown voltage
 $V_{(BR)DSS} = f(T_j)$





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