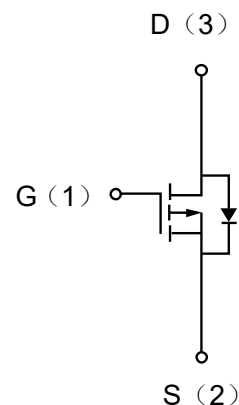


Description

The enhancement mode MOS is extremely high density cell and low on-resistance.

This PPM3T18V6 uses advanced trench technology to provide excellent $R_{DS(on)}$, low gate voltages as low as 2.5V. This device is suitable for use as a load switching application and a wide variety of other applications.

MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(m\Omega)$	$I_D(A)$
>-18	<20 @ $V_{GS}=-4.5V$	-6
	<28 @ $V_{GS}=-2.5V$	
	<40 @ $V_{GS}=-1.8V$	



Absolute maximum rating@25°C

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-18	V
Gate-Source Voltage		V_{GS}	± 12	V
Drain Current	Continuous	I_D	-6	A
	Pulsed (Note1)	I_{DM}	-24	A
Maximum Power Dissipation		P_D	1.4	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 To 150	°C

Thermal Characteristic

Parameter	Symbol	Value	Unit
Thermal Resisitance, Junction-to-Ambient (Note2)	$R_{\theta JA}$	90	°C/W

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =-250μA, V _{GS} =0V	-18	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V	-	-	-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V	-	-	±100	nA
ON CHARACTERISTICS (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-0.7	-1.0	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-6A	-	17.5	20	mΩ
		V _{GS} =-2.5V, I _D =-5A	-	22	28	
		V _{GS} =-1.8V, I _D =-2.5A	-	30	40	
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-8A		33		S
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage (Note3)	V _{SD}	V _{GS} =0V, I _S =-1A	-	-	-1.2	V
Diode Forward Current (Note2)	I _S		-	-	-3.5	A
DYNAMIC CHARACTERISTICS (Note 4)						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =-6V, F=1MHz	-	1370		pF
Output Capacitance	C _{OSS}		-	350		pF
Reverse Transfer Capacitance	C _{RSS}		-	258		pF
SWITCHING PARAMETERS (Note 4)						
Turn-On Delay Time	t _{d(on)}	V _{DD} =-6V, V _{GS} =-4.5V, R _L =0.75Ω, R _{GEN} =3Ω	-	11	-	ns
Turn-On Rise Time	t _r		-	25	-	ns
Turn-Off Delay Time	t _{d(off)}		-	70	-	ns
Turn-Off Fall Time	t _f		-	42	-	ns
Total Gate Charge	Q _g	V _{DS} =-6V, I _D =-8A, V _{GS} =-4.5V	-	13	-	nC
Gate-Source Charge	Q _{gs}		-	2	-	nc
Gate-Drain Charge	Q _{gd}		-	3	-	nc

Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, $t \leq 10sec$.

3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycles $\leq 2\%$.

4. Guaranteed by design, not subject to production.

Typical Characteristics

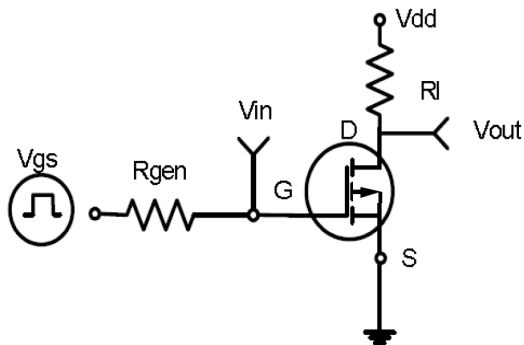


Fig 1. Switching Test Circuit

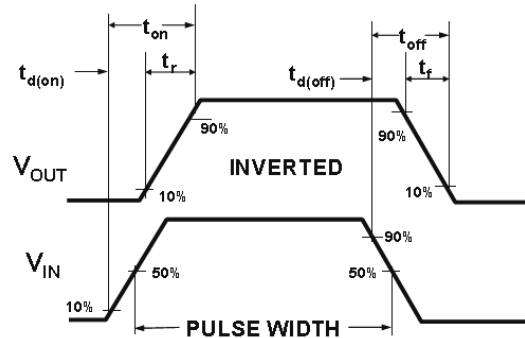


Fig 2. Switching Waveforms

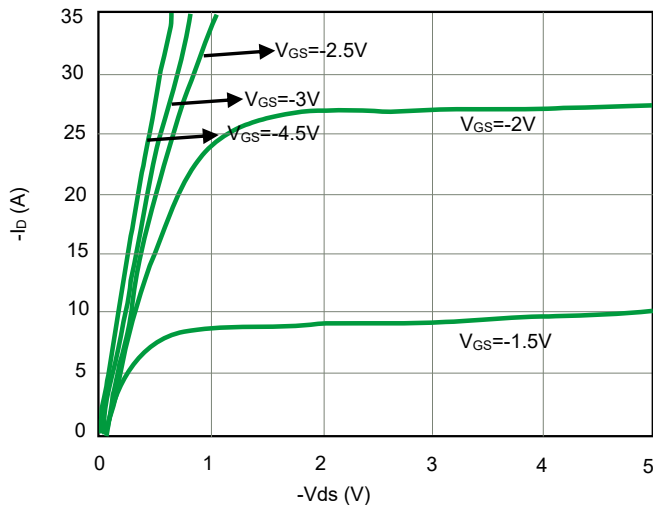


Fig 3. On-region Characteristics

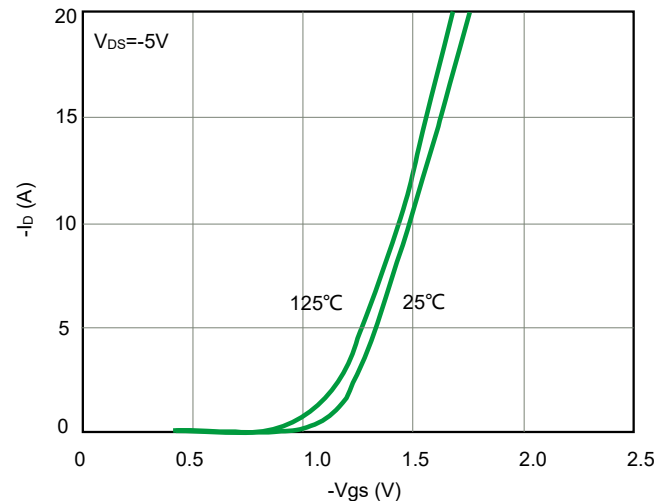


Fig4. Transfer Characteristics

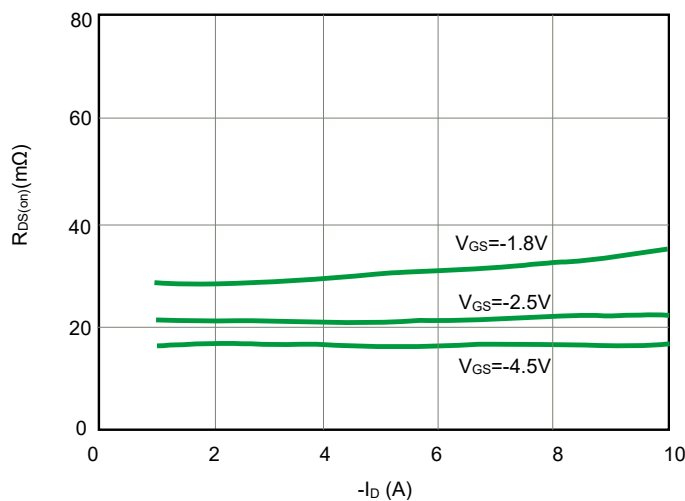


Fig 5. On-Resistance vs. Drain Current and Gate Voltage

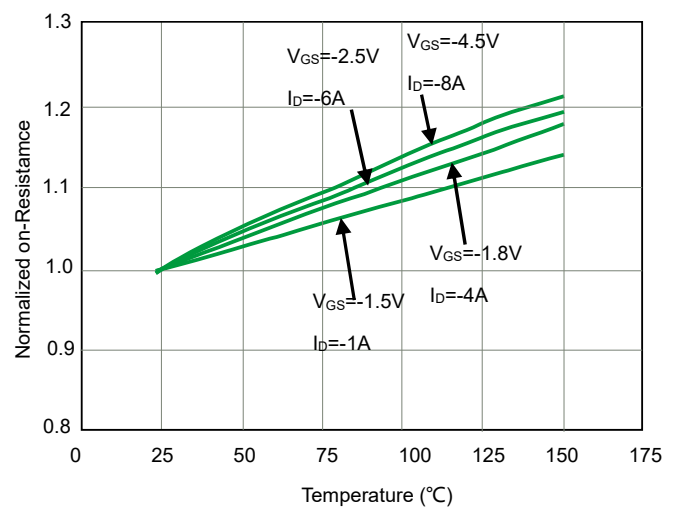


Fig 6. On-Resistance vs. Junction Temperature

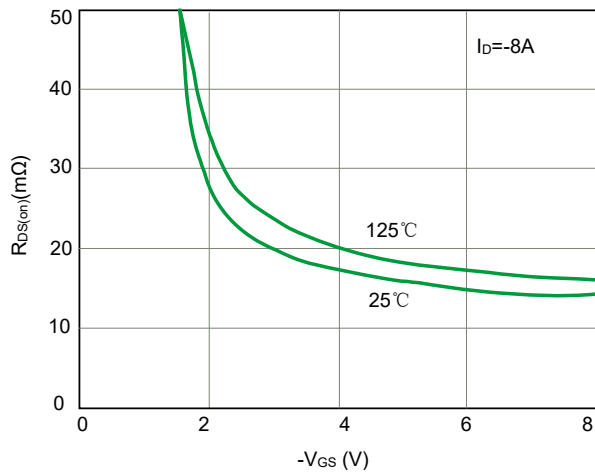


Fig 7. On Resistance vs. Gate-Source Voltage

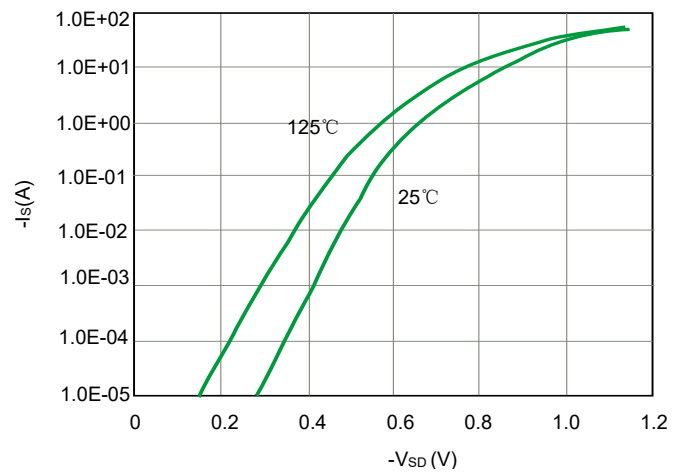


Fig 8. Body-Diode Characteristics

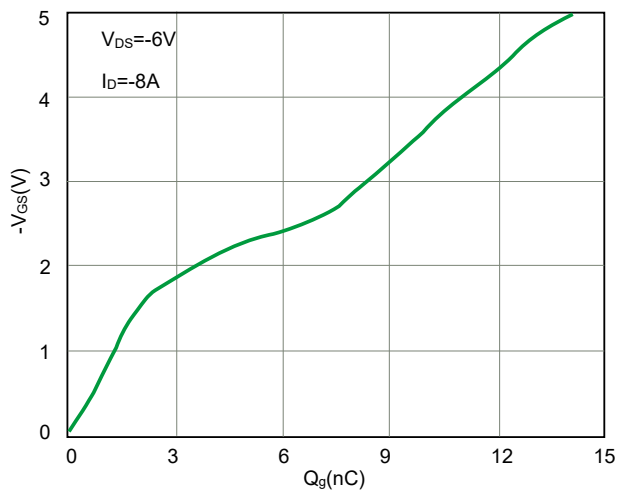


Fig 9. Gate Charge Characteristics

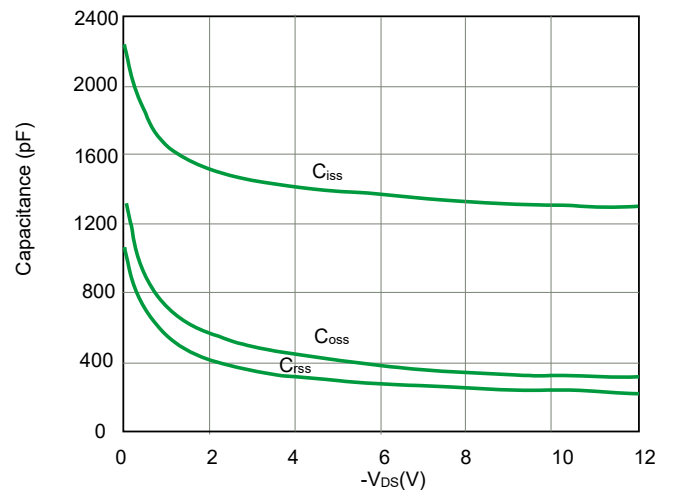


Fig 10. Capacitance Characteristics

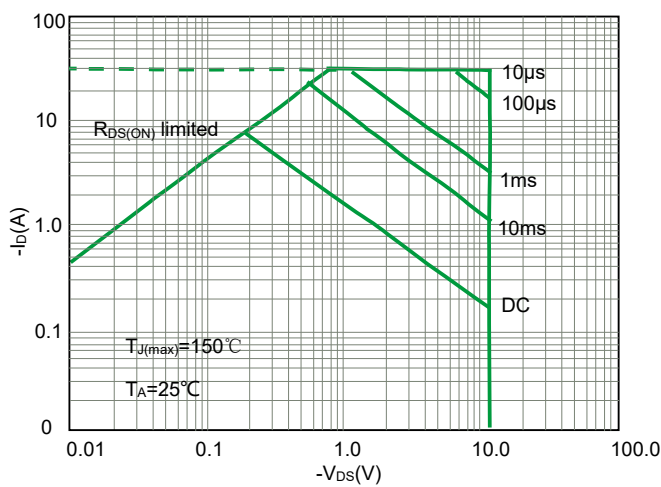


Fig 11. Maximum Forward Biased Safe Operating Area

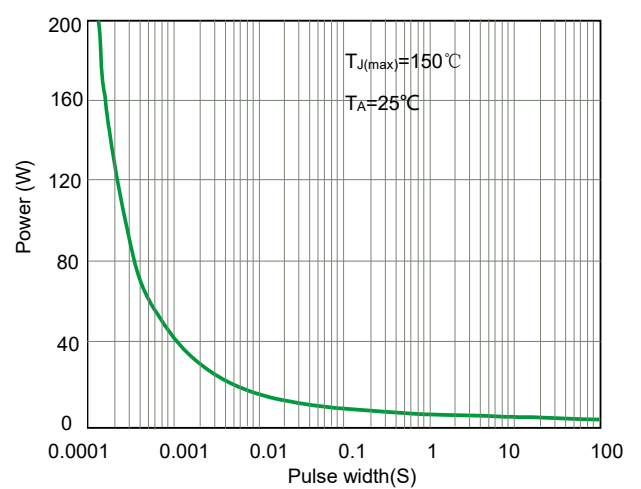


Fig 12. Single Pulse Power Rating Junction to Ambient

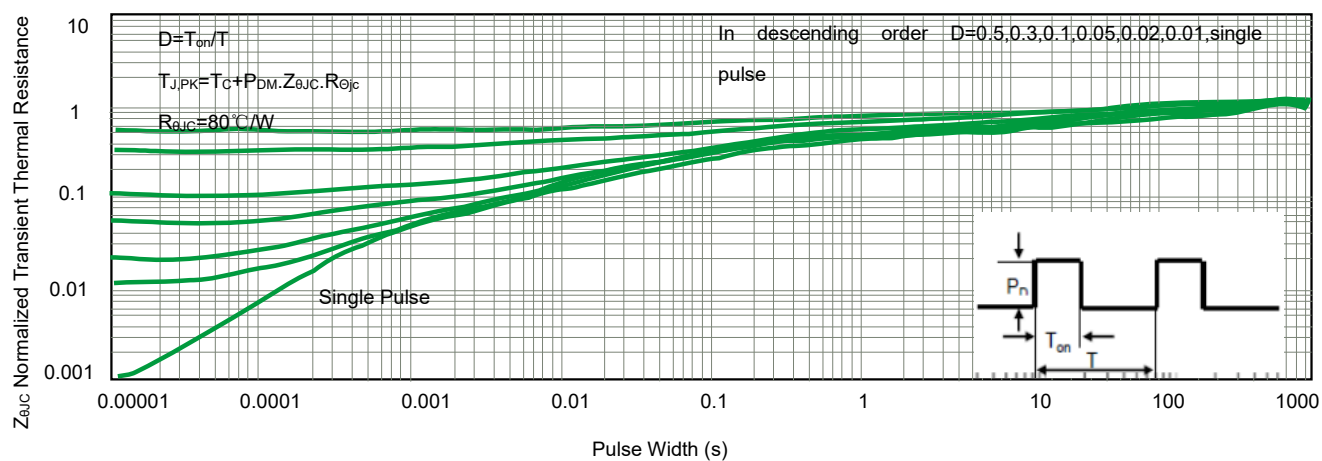
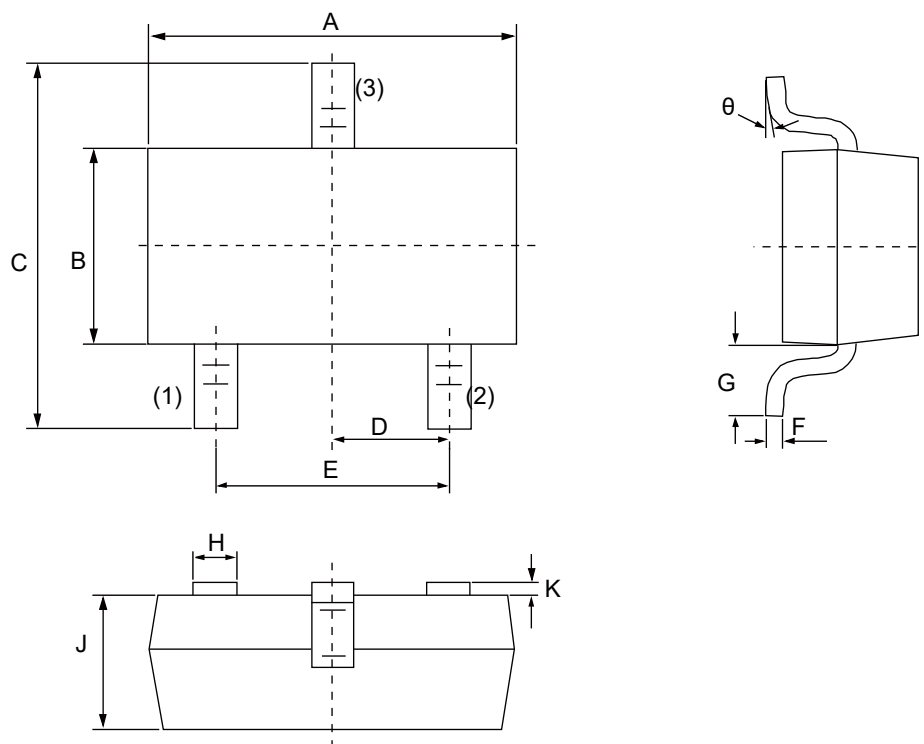


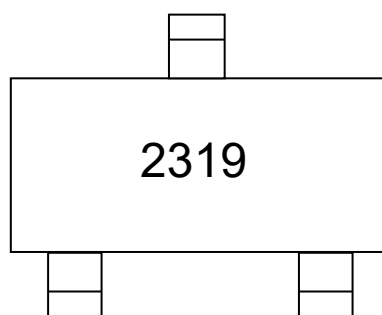
Fig 13. Normalized Maximum Transient Thermal Impedance

Product dimension(SOT-23)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.82	3.02	0.111	0.119
B	1.50	1.70	0.059	0.067
C	2.65	2.95	0.104	0.116
D	0.950(BSC)		0.037(BSC)	
E	1.80	2.00	0.071	0.079
F	0.10	0.20	0.004	0.008
G	0.55(REF)		0.022(REF)	
H	0.30	0.50	0.012	0.020
J	1.05	1.15	0.041	0.045
K	0.00	0.10	0.000	0.004
θ	0°	8°	0°	8°

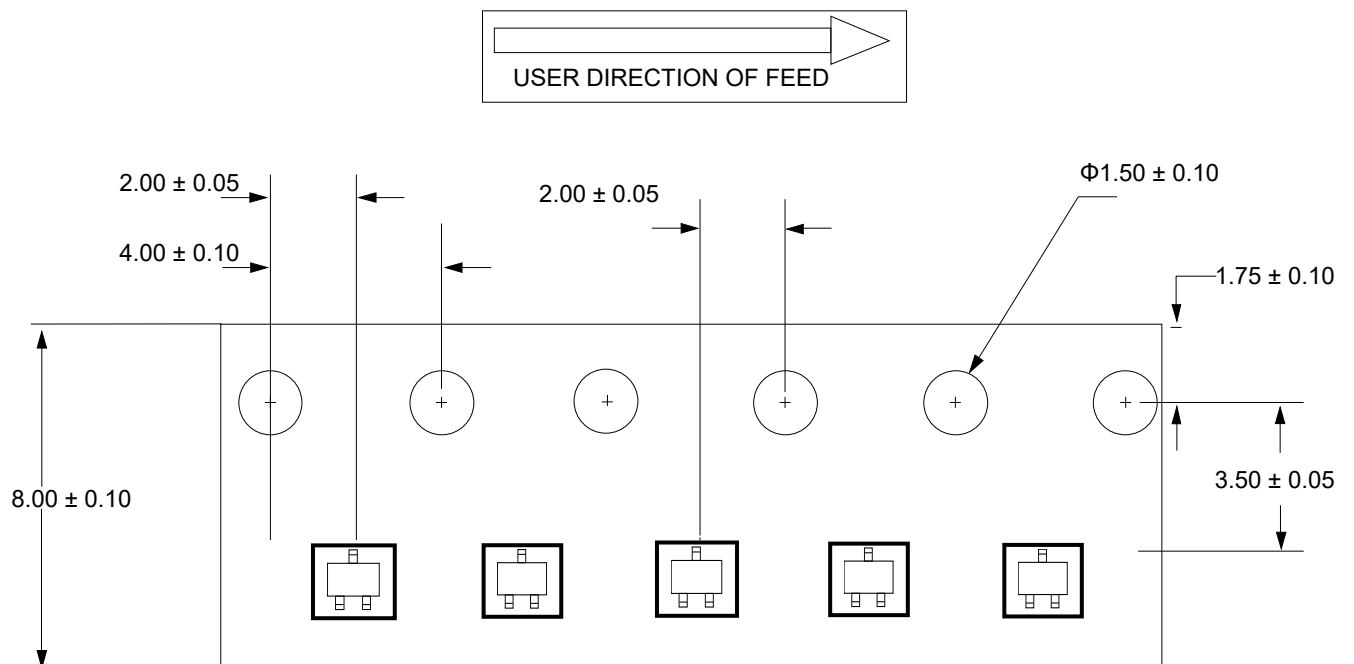
Marking information



Ordering information

Package	Reel	MPQ
SOT-23	7"	3000 / Tape & Reel

Load with information



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