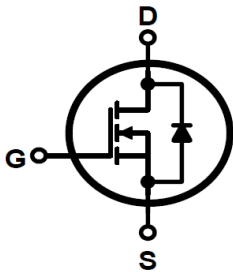


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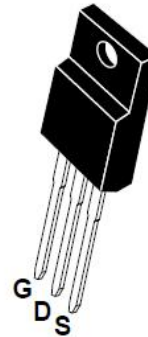
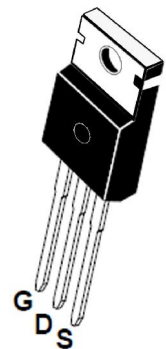
N-Channel Power MOSFET

**FEATURES**

Fast Switching  
 Low ON Resistance( $R_{ds(on)} \leq 0.45\Omega$ )  
 Low Gate Charge (Typical Data:70nC)  
 Low Reverse transfer capacitances(Typical: 32pF)  
 100% Single Pulse avalanche energy Test

**Schematic Diagram (N-Channel)****PRODUCT SUMMARY**

$V_{DSS}$	600	V
$I_D$	20.0	A
$P_D(T_C=25^\circ\text{C})$	250	W
$R_{DS(ON)}$	0.35	$\Omega$

**TO-220F****TO-220****MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS** $T_C = 25^\circ\text{C}$  unless otherwise specified

Symbol	Parameter	Rating	Units
$V_{DSS}$	Drain-to-Source Voltage	600	V
$I_D$	Continuous Drain Current	20	A
	Continuous Drain Current $T_C = 100^\circ\text{C}$	13	A
$I_{DM}^{a1}$	Pulsed Drain Current	80	A
$V_{GS}$	Gate-to-Source Voltage	$\pm 30$	V
$E_{AS}^{a2}$	Single Pulse Avalanche Energy	1000	mJ
$E_{AR}^{a1}$	Avalanche Energy, Repetitive	100	mJ
$I_{AR}^{a1}$	Avalanche Current	14	A
$dv/dt^{a3}$	Peak Diode Recovery $dv/dt$	4.5	V/ns
$P_D$	Power Dissipation	250	W
	Derating Factor above $25^\circ\text{C}$	2.0	W/ $^\circ\text{C}$
$T_J, T_{stg}$	Operating Junction and Storage Temperature Range	150, - 55 to 150	$^\circ\text{C}$
$T_L$	Maximum Temperature for Soldering	300	$^\circ\text{C}$

<sup>a1</sup>: Repetitive rating; pulse width limited by maximum junction temperature<sup>a2</sup>:  $L=10\text{mH}$ ,  $I_D=20\text{A}$ , Start  $T_J=25^\circ\text{C}$ <sup>a3</sup>:  $I_{SD}=20\text{A}$ ,  $di/dt \leq 200\text{A}/\mu\text{s}$ ,  $V_{DD} \leq BV_{DSS}$ , Start  $T_J=25^\circ\text{C}$ **Kingtronics**® International Company

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# KT20N60

## N-Channel Power MOSFET

### RATING AND CHARACTERISTIC CURVES

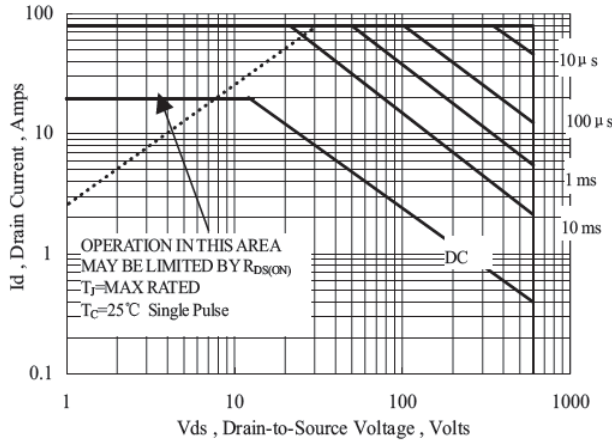


Figure 1 Maximum Forward Bias Safe Operating Area

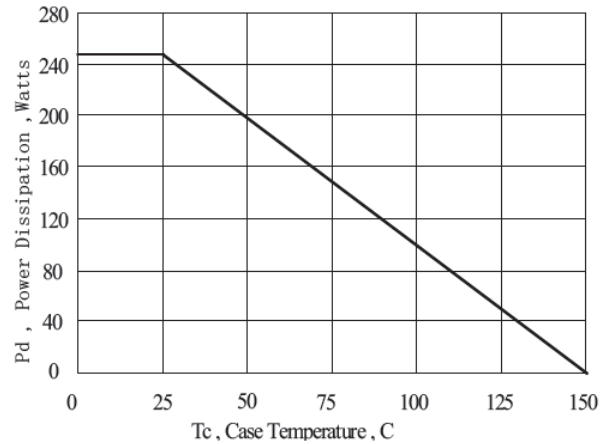


Figure 2 Maximum Power Dissipation vs Case Temperature

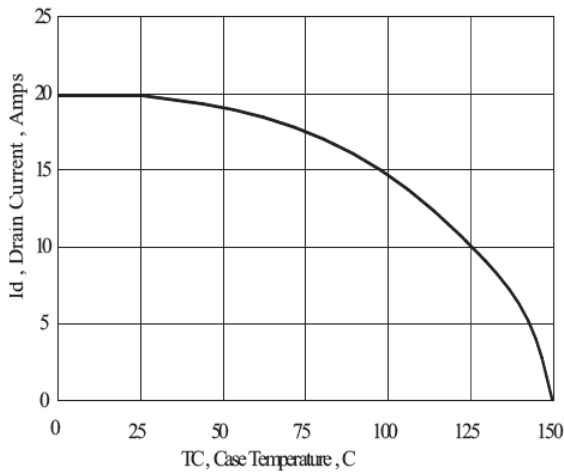


Figure 3 Maximum Continuous Drain Current vs Case Temperature

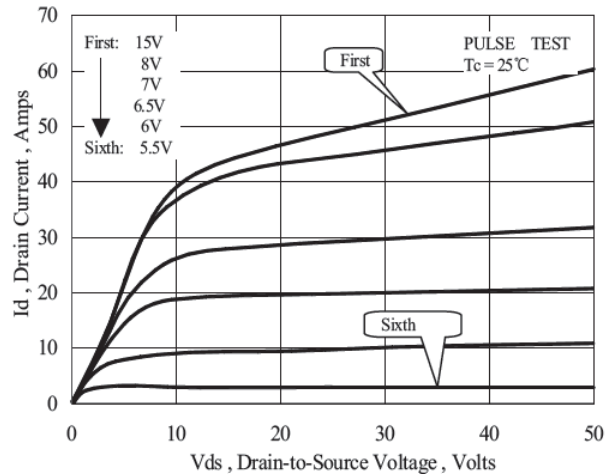


Figure 4 Typical Output Characteristics

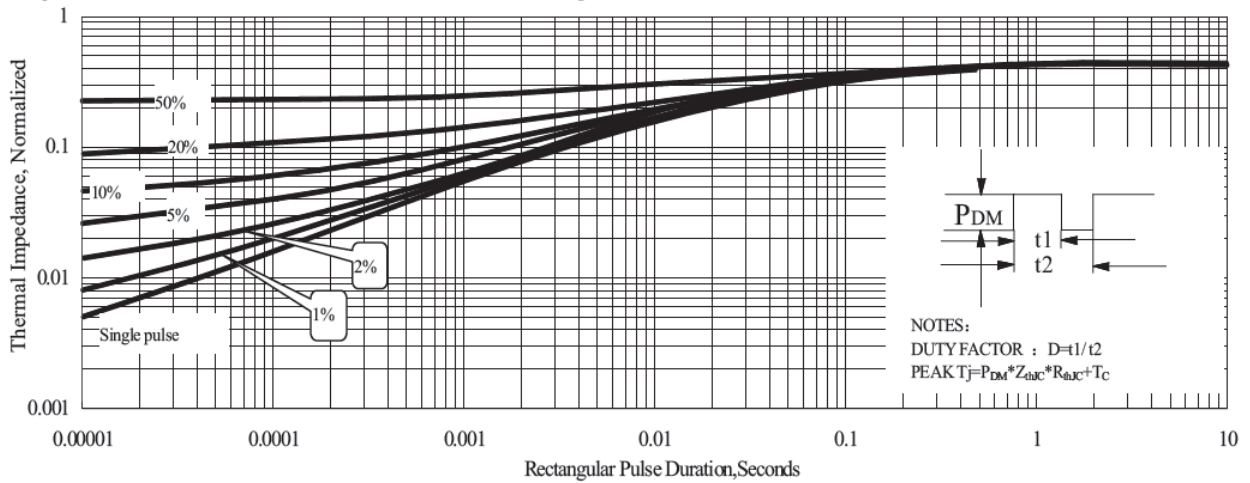


Figure 5 Maximum Effective Thermal Impedance, Junction to Case

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## N-Channel Power MOSFET

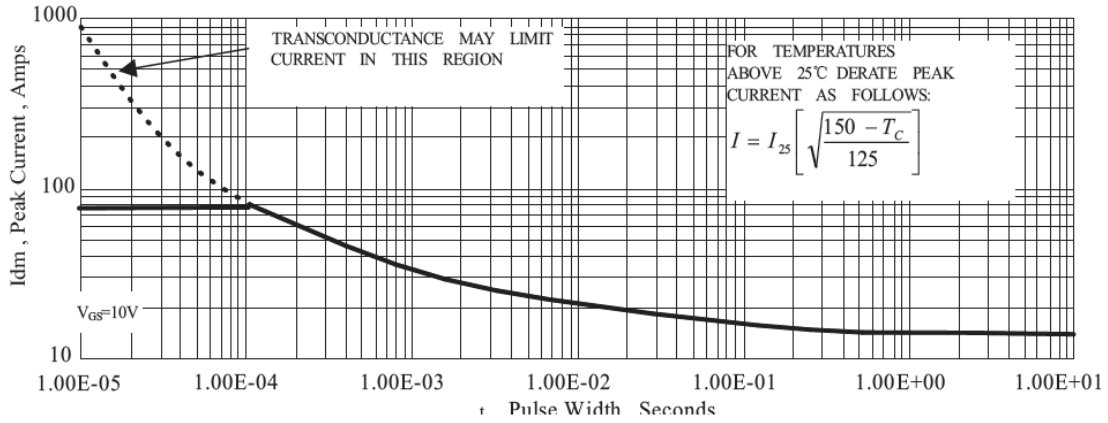


Figure 6 Maximum Peak Current Capability

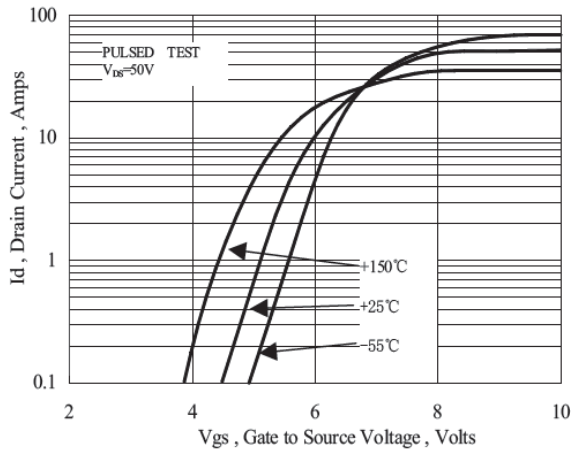


Figure 7 Typical Transfer Characteristics

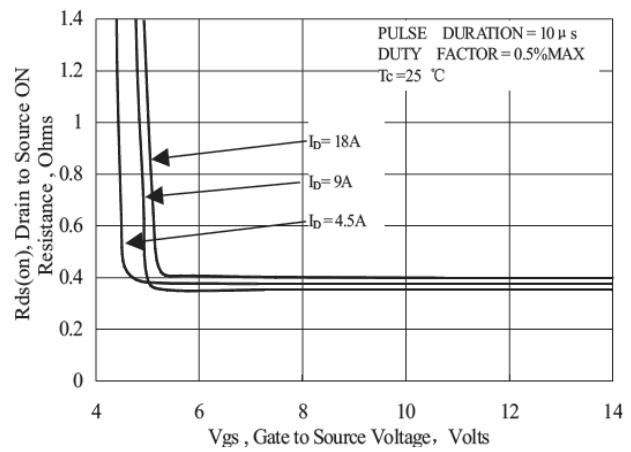


Figure 8 Typical Drain to Source ON Resistance vs Gate Voltage and Drain Current

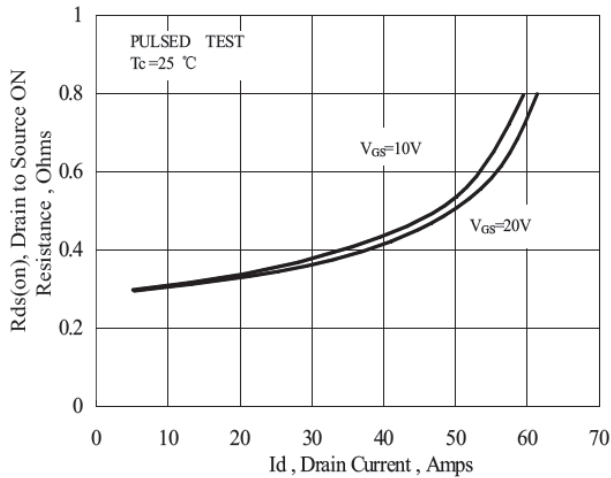


Figure 9 Typical Drain to Source ON Resistance vs Drain Current

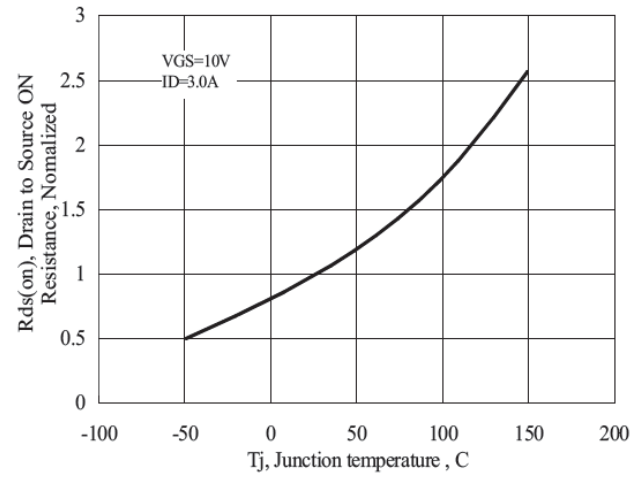


Figure 10 Typical Drain to Source on Resistance vs Junction Temperature

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### N-Channel Power MOSFET

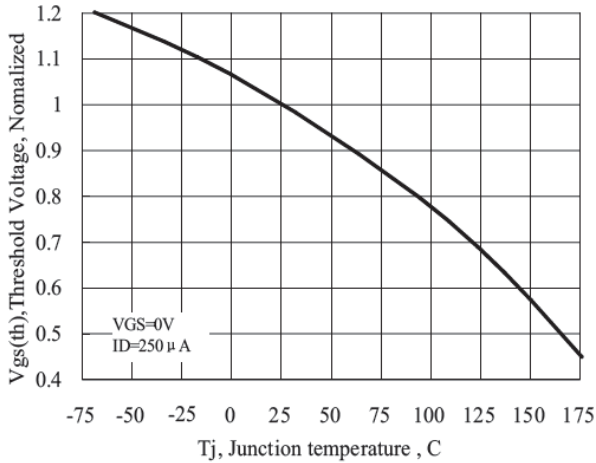


Figure 11 Typical Threshold Voltage vs Junction Temperature

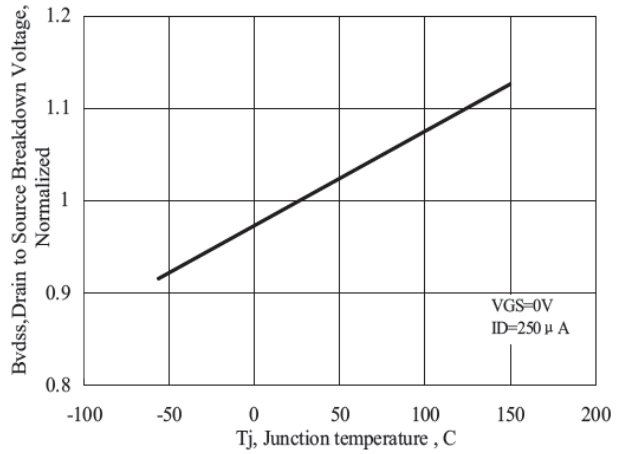


Figure 12 Typical Breakdown Voltage vs Junction Temperature

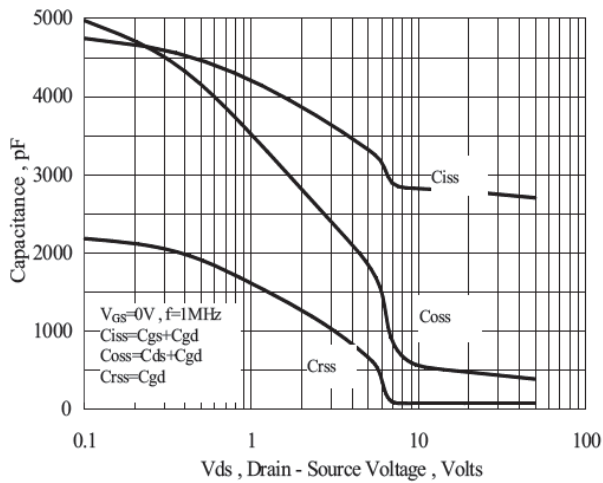


Figure 13 Typical Capacitance vs Drain to Source Voltage

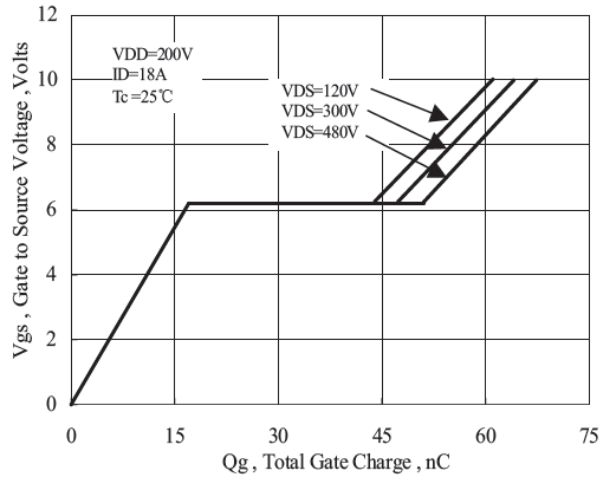


Figure 14 Typical Gate Charge vs Gate to Source Voltage

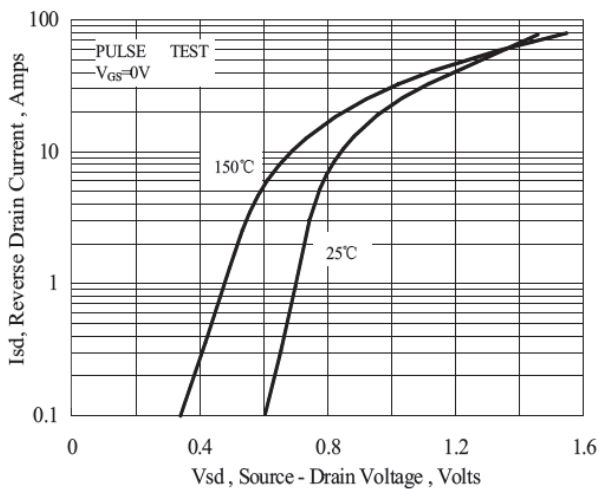


Figure 15 Typical Body Diode Transfer Characteristics

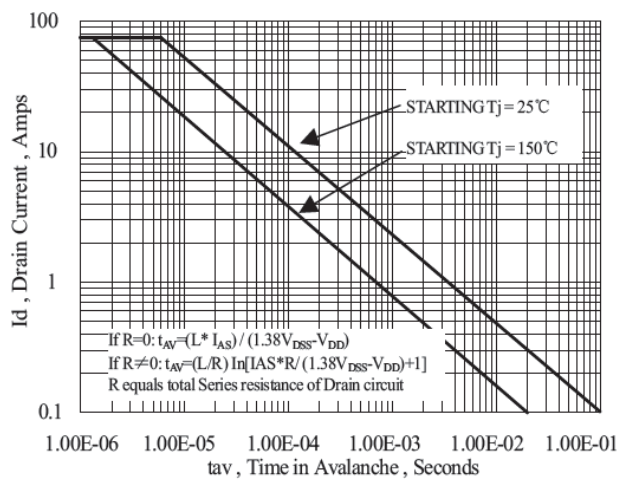


Figure 16 Unclamped Inductive Switching Capability

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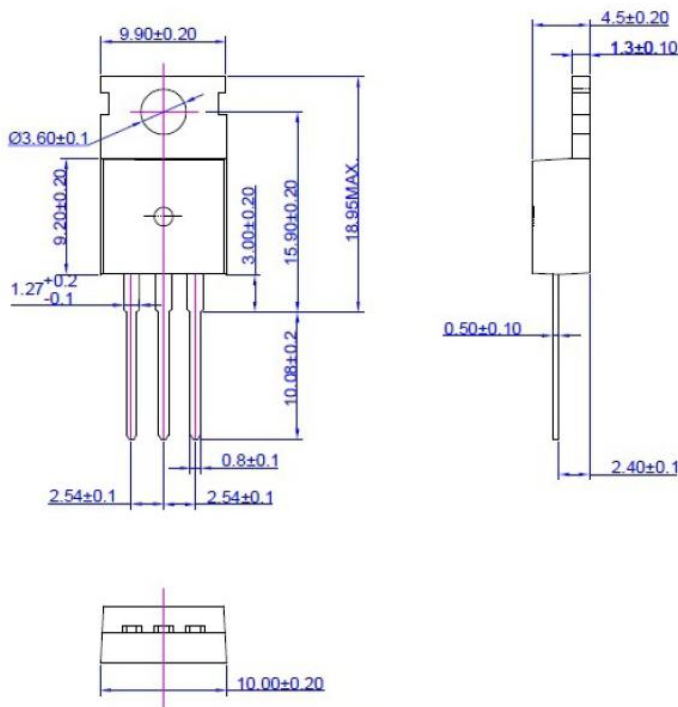
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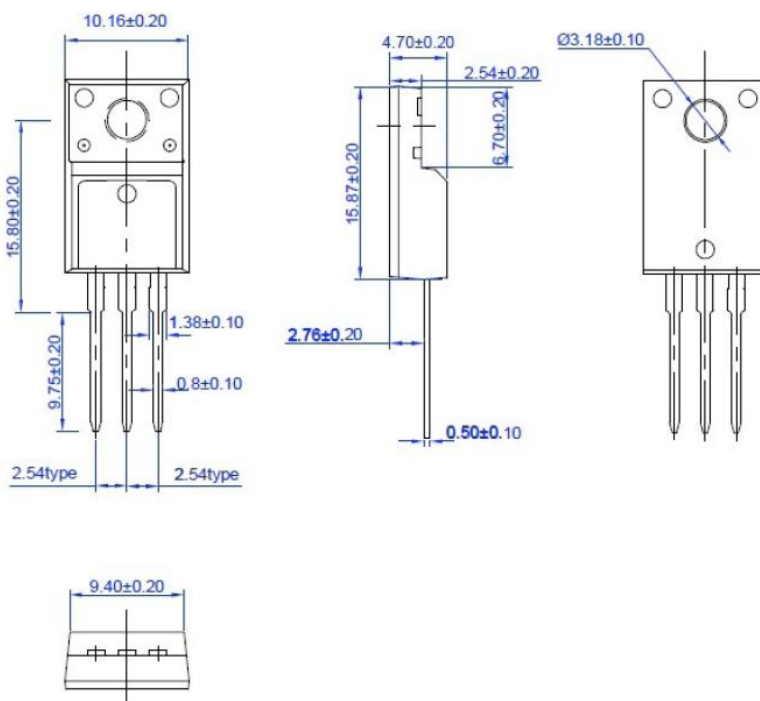
N-Channel Power MOSFET

### Package Dimensions

#### TO-220



#### TO-220F



Notes: Specifications are subject to change without notice.

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