

thm_2Ebool_2EDATATYPE__TAG__THM (TMP-
KRaCahbtPLf44qnaGGCQgGMURgy8yjvQ)

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Definition 1 We define $c_2Emin_2E_3D$ to be $\lambda A.\lambda x \in A.\lambda y \in A.inj_o (x = y)$
of type $\iota \Rightarrow \iota$.

Definition 2 We define c_2Ebool_2ET to be $(ap (ap (c_2Emin_2E_3D (2^2)) (\lambda V0x \in 2.V0x)) (\lambda V1x \in 2.V1x))$

Definition 3 We define $c_2Ebool_2E_21$ to be $\lambda A_27a : \iota.(\lambda V0P \in (2^{A_27a}).(ap (ap (c_2Emin_2E_3D (2^{A_27a}))$

Definition 4 We define $c_2Ebool_2EDATATYPE$ to be $\lambda A_27a : \iota.(\lambda V0x \in A_27a.c_2Ebool_2ET)$.

Theorem 1

$\forall A_27a.nonempty A_27a \Rightarrow (\forall V0x \in A_27a.((p (ap (c_2Ebool_2EDATATYPE A_27a) V0x)) \Leftrightarrow True))$