Component Location

General Description

During the key teaching procedure the transponder will be programmed with vehicle specific data. The vehicle specific data are written into the transponder memory. The write procedure is unique; therefore the content of transponder can never be modified or changed. The data are a string of 9 bytes defined by vehicle manufacturer.

The transponder memory is split into two strings called authenticator and key password After this programming the transponder memory is locked and the data(PIN code) cannot be read or changed respectively. The transponder status changes from "virgin" to "learnt".

Additionally every transponder includes a unique IDE (Identifier number) of 32 bit. Unique means that the IDE of all transponder is different from each other. The IDE is programmed by the transponder manufacturer and is a read-only value. The authenticator and the key password are not transferred from ECM to transponder or vice versa. Only the results from the encryption algorithm are transferred. It is almost impossible to calculate the vehicle specific data from the encryption result.

For teaching of keys and special purposes the ECM is connected to the tester device.

When IG is ON, the coil supplies energy to the transponder which in turn accumulates energy in the condenser.

Once the energy supply from the coil has stopped, using the stored energy in the condenser, the transponder transmits the ID CODE (stored within the ASIC).

DTC Description

The ECM sets DTC P1693 if there's abnormal response from transponder.

DTC Detecting Condition

Item	Detecting Condition	Possible Cause
DTC Strategy		● Corrupted data from Transponder ● More than one TP in the magnetic field ● No TP(Key without TP) in the magnetic field
Enable Conditions	● IG ON	
Threshold value		
Detecting time		
FAIL SAFE		

Schematic Diagram

2/2

IMMOBILIZER CONTROL MODULE

DOOR WARNING SWITCH