



## TECHNICAL SERVICE BULLETIN

### 2.7L EcoBoost Engine - Illuminated MIL/Engine Coolant Over Temperature Warning With Various DTCs

**21-2168**

01 June 2021

**Model:**

<b>Ford</b> 2018-2020 F-150	Engine: 2.7L EcoBoost
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**Issue:** Some 2018-2020 F-150 vehicles equipped with a 2.7L EcoBoost engine may exhibit an illuminated malfunction indicator lamp (MIL) and/or Engine Coolant Over Temperature warning with diagnostic trouble codes (DTCs) P0116, P0117, P0118, P0119, P0128, P0217, P0330, P1026 and/or P1299. This condition may be caused by an intermittent drop in the engine coolant temperature (ECT) voltage. To correct the condition, replace the heater hose with the new relocated ECT and install a jumper harness.

**Action:** Follow the Service Procedure steps to correct the condition on vehicles that meet all of the following criteria:

- 2018-2020 F-150
- 2.7L EcoBoost
- Illuminated malfunction indicator lamp (MIL) and/or Engine Coolant Over Temperature warning with DTCs P0116, P0117, P0118, P0119, P0128, P0217, P0330, P1026 and/or P1299

**NOTE:** Part quantity refers to the number of that service part number required, which may be different than the number of individual pieces. Service part numbers contain 1 piece unless otherwise stated. "As Needed" indicates the part is required but the number may vary or is not a whole number; parts can be billed out as non-whole numbers, including less than 1.

**Parts**

Part Number		Description	Quantity
ML3Z-14A411-H	-	ECT Relocation Kit	1
VC-3-B	-	Motorcraft® Orange Concentrated Antifreeze/Coolant (All Markets Except Canada)	As Needed
CVC-3-B2	-	Motorcraft® Orange Concentrated Antifreeze/Coolant (Canada Only)	As Needed
VC-13-G	-	Motorcraft® Yellow Concentrated Antifreeze/Coolant (All Markets Except Canada)	As Needed
CVC-13-G	-	Motorcraft® Yellow Concentrated Antifreeze/Coolant (Canada Only)	As Needed
Obtain Locally	4 Pieces Required	Zip Tie	4

**Warranty Status:** Eligible under provisions of New Vehicle Limited Warranty (NVLW)/Emissions Warranty/Service Part Warranty (SPW)/Special Service Part (SSP)/Extended Service Plan (ESP) coverage. Limits/policies/prior approvals are not altered by a TSB. NVLW/Emissions Warranty/SPW/SSP/ESP coverage limits are determined by the identified causal part and verified using the OASIS part coverage tool.

**Labor Times**

Description	Operation No.	Time
2018-2020 F150 2.7L EcoBoost: Retrieve DTCs Relocate The ECT Sensor Following The Service Procedure (Do Not Use With Any Other Labor Operations)	212168A	1.3 Hrs.

**Repair/Claim Coding**

Causal Part:	12A648
Condition Code:	42

**Service Procedure**

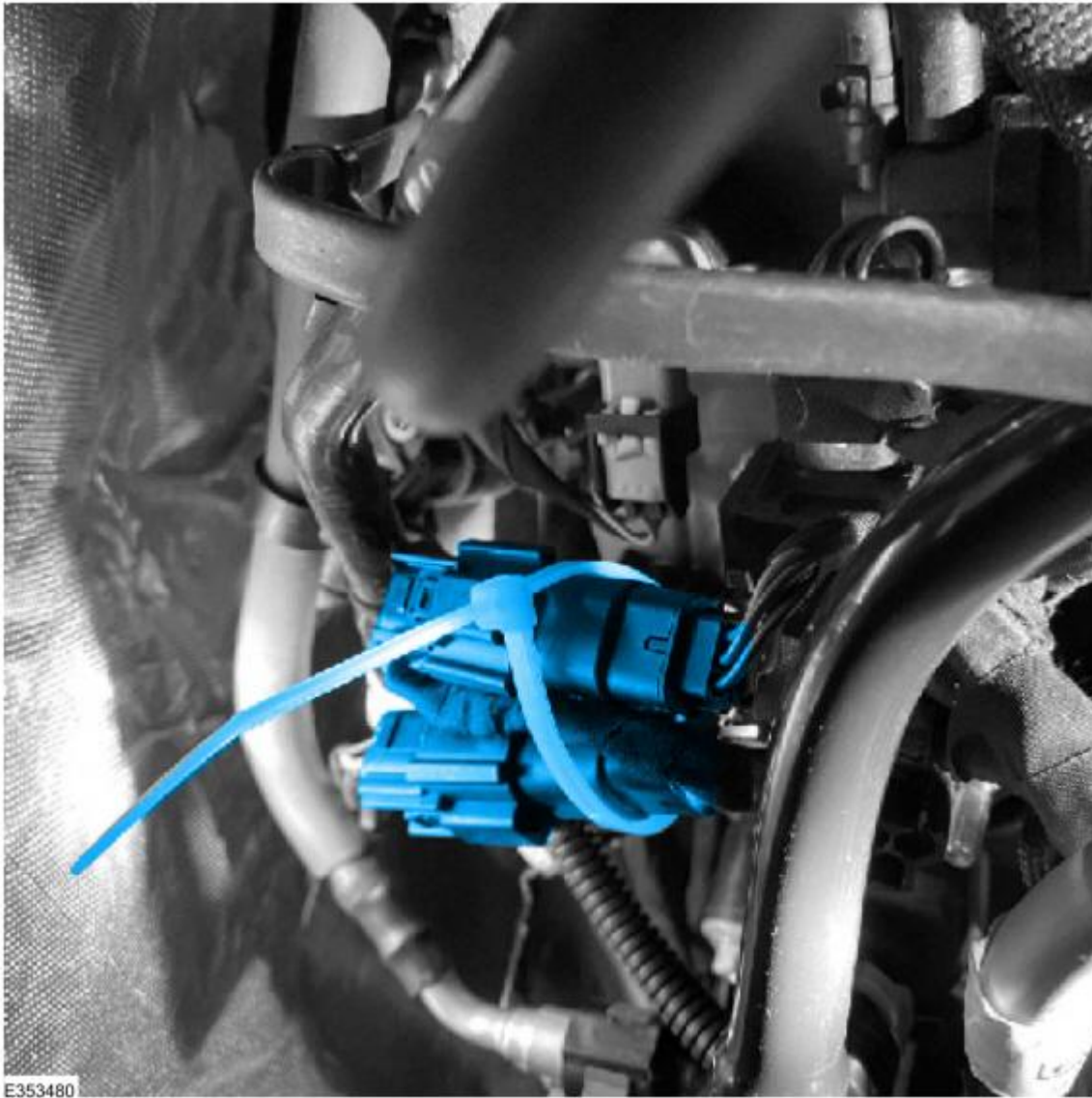
1. Drain the cooling system. Refer to Workshop Manual (WSM), Section 303-03A.
2. Replace the heater hose with the new part containing the ECT sensor. (Figure 1)

Figure 1



3. Disconnect connector C1047 and connect the jumper harness to the connectors.
4. Secure the connectors with retainers. (Figure 2)

Figure 2



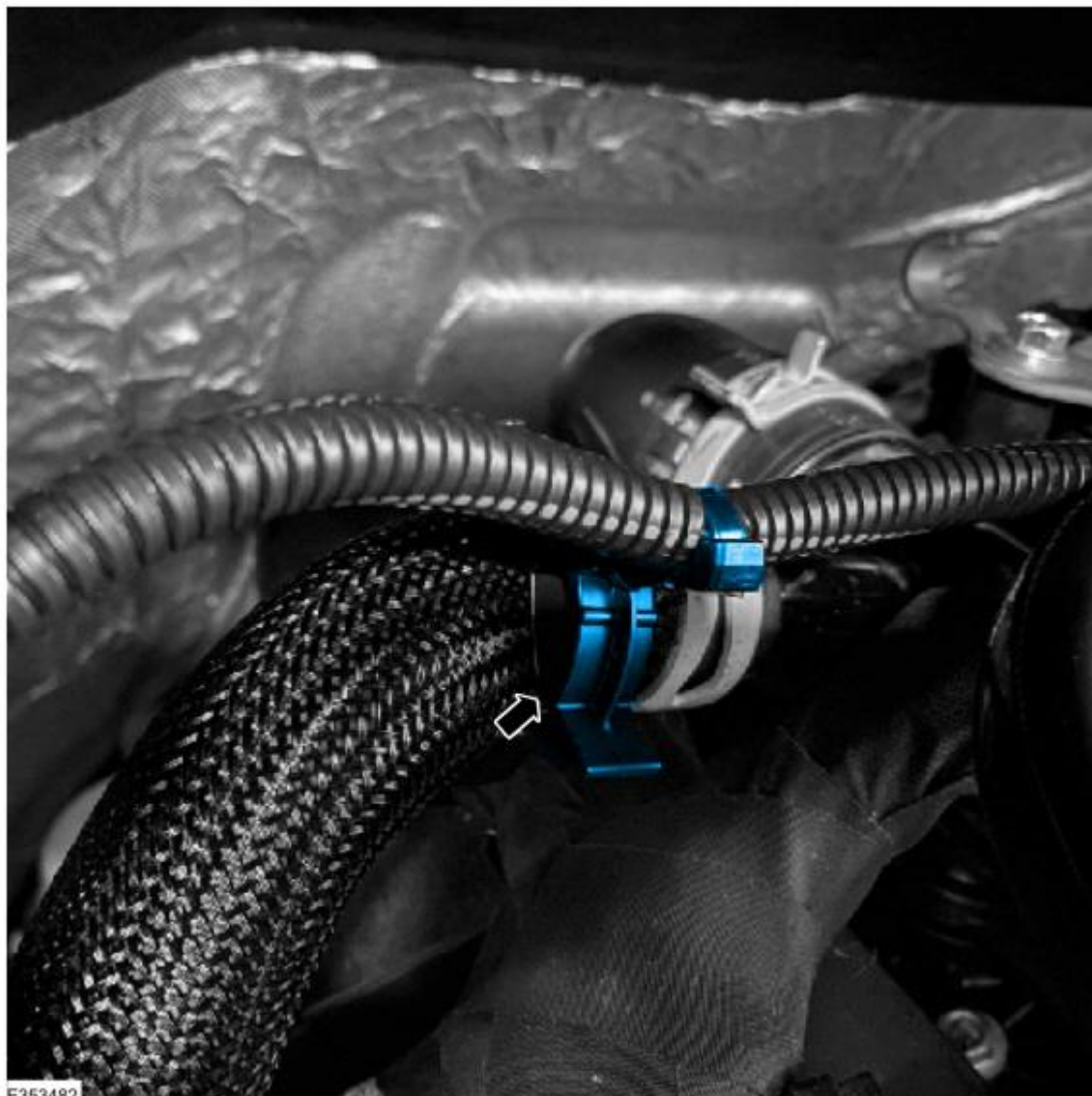
5. Route the harness under the positive crankcase ventilation (PCV) and evaporative emissions (EVAP) lines, then across the engine and connect to the ECT sensor. (Figure 3)

Figure 3

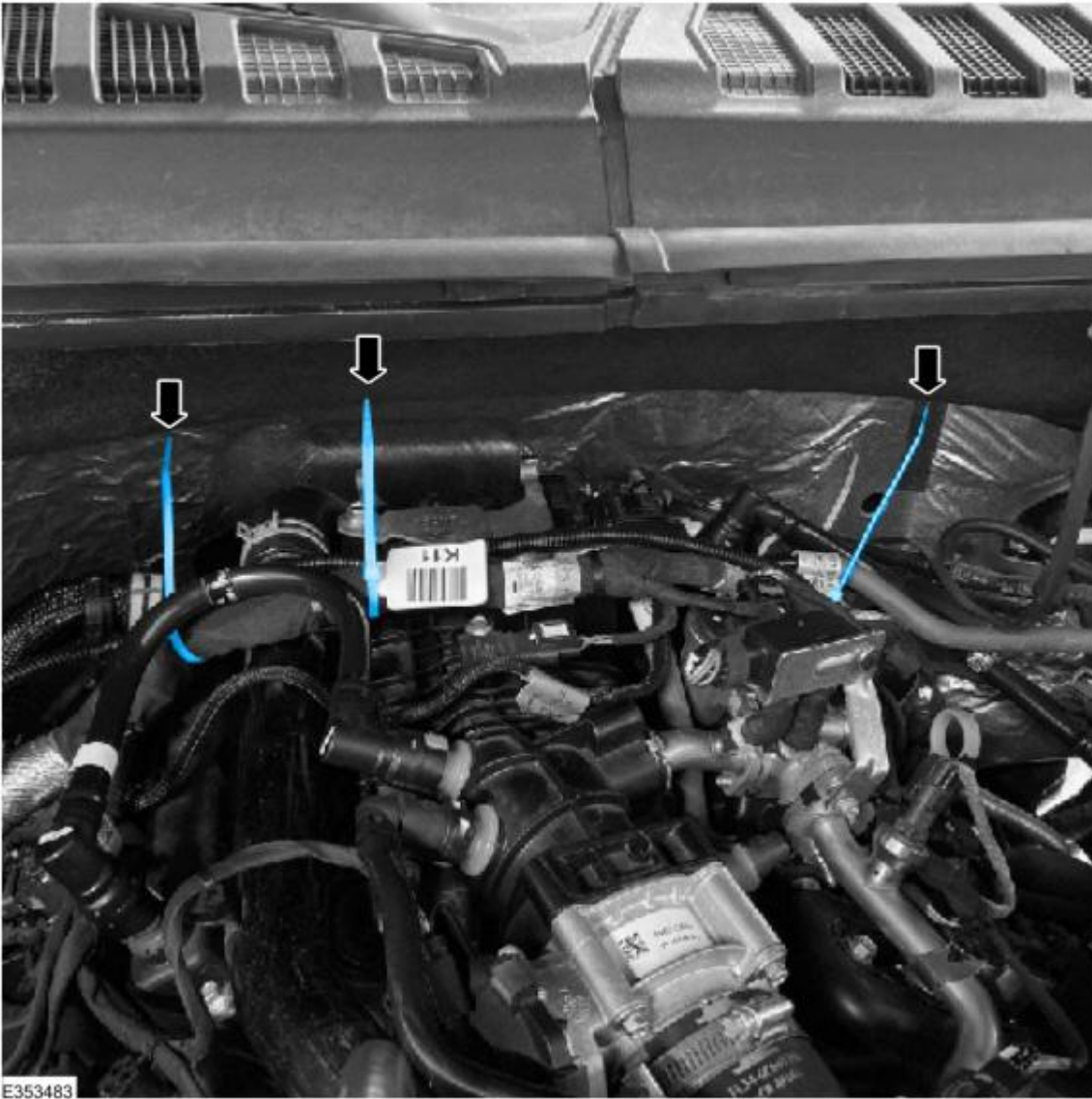


6. Clip the harness to the heater hose. (Figure 4)

Figure 4



7. Using retainers, secure the jumper harness to the engine harness in the 3 locations shown in Figure 5.  
Figure 5



8. Fill the cooling system. Refer to WSM, Section 303-03A.
9. Reprogram the PCM using the latest software level of the appropriate Ford diagnostic scan tool. If the Ford diagnostic scan tool screen displays a question that includes "P552\_27L\_Overheat\$Q", this is an indication that the Ford diagnostic scan tool is not at the latest software level and needs to be updated to the latest software level.

**NOTE: Advise the customer this vehicle is equipped with an adaptive transmission shift strategy which allows the vehicle's computer to learn the transmission's unique parameters and improve shift quality. When the adaptive strategy is reset, the computer will begin a relearning process. This relearning process may result in firmer than normal upshifts and downshifts for several days.**

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NOTE: The information in Technical Service Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers". Do not assume that a condition described affects your car or truck. Contact a Ford or Lincoln dealership to determine whether the Bulletin applies to your vehicle. Warranty Policy and Extended Service Plan documentation determine Warranty and/or Extended Service Plan coverage unless stated otherwise in the TSB article. The information in this Technical Service Bulletin (TSB) was current at the time of printing. Ford Motor Company reserves the right to supersede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.